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Geotechnical
Environmental and
Water Resources
Engineering

**Immediate Response Action
Status Report No. 3** (DEP RTN 3-
23246) **and Immediate Response
Action Status Report No. 1** (DEP
RTN 3-26114)

50 Tufts Street, Somerville, MA

Appendices A through M

Submitted to:
UniFirst Corporation
68 Jonspin Road
Wilmington, MA 01887

Prepared by:
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May 10, 2007, 2007

Project No. 04516-2

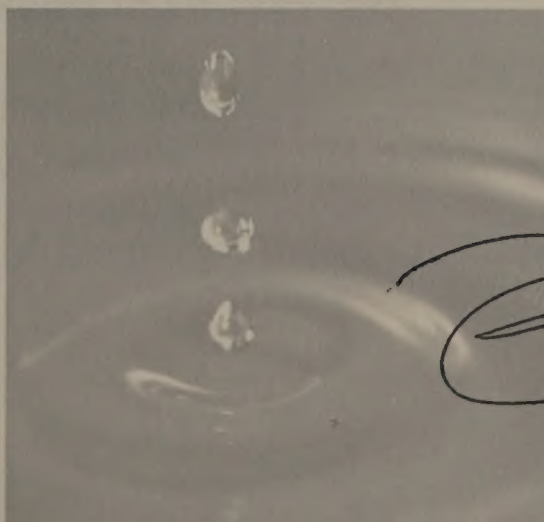
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Heen S. Gladstone, P.E., LSP
Vice President

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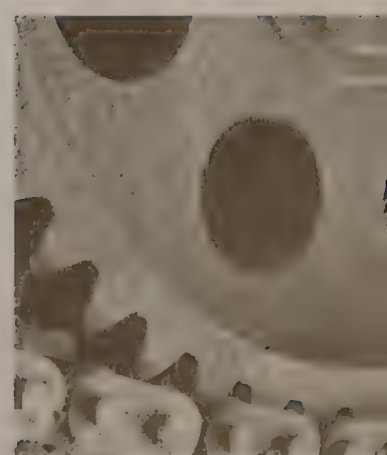
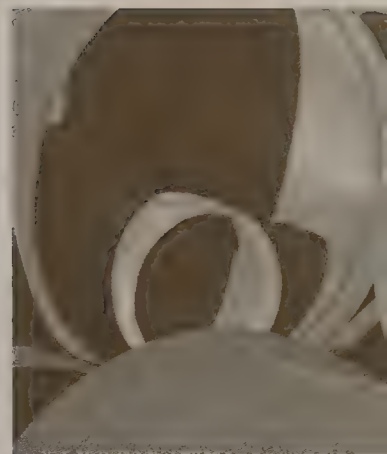
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|------------|---|
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Geotechnical
Environmental and
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Appendix A

Copies of IRA Status Report Transmittal Forms (BWSC105)



Massachusetts Department of Environmental Protection

eDEP Transaction Copy

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Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3 - 23246

A. RELEASE OR THREAT OF RELEASE LOCATION:

1. Release Name/Location Aid: **50 TUFTS ST & PROP ACROSS THE ST**
2. Street Address: **50 TUFTS ST**
3. City/Town: **SOMERVILLE** 4. ZIP Code: **02145-4129**
5. UTM Coordinates: a. UTM N: **4694314** b. UTM E: **328044**
- ☒ 6. Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.
☐ a. Tier IA ☐ b. Tier IB ☒ c. Tier IC ☐ d. Tier II
- ☐ 7. Check here if this location is Adequately Regulated, pursuant to 310 CMR 40.0110-0114. Specify Program (check one):
☐ a. CERCLA ☐ b. HSWA Corrective Action ☐ c. Solid Waste Management
☐ d. RCRA State Program (21C Facilities)

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of Initial IRA Written Plan (if previously submitted): **1/9/2006**
(mm/dd/yyyy)
- ☐ 2. Submit an **Initial IRA Plan**.
- ☐ 3. Submit a **Modified IRA Plan** of a previously submitted written IRA Plan.
- ☐ 4. Submit an **Imminent Hazard Evaluation**. (check one)
☐ a. An Imminent Hazard exists in connection with this Release or Threat of Release.
☐ b. An Imminent Hazard does not exist in connection with this Release or Threat of Release.
☐ c. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release, and further assessment activities will be undertaken.
☐ d. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release. However, response actions will address those conditions that could pose an Imminent Hazard.
- ☐ 5. Submit a request to **Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard**.
- ☒ 6. Submit an **IRA Status Report**.
- ☐ 7. Submit a **Remedial Monitoring Report**. (This report can only be submitted through eDEP.)
a. Type of Report: (check one) ☐ i. Initial Report ☐ ii. Interim Report ☐ iii. Final Report
b. Frequency of Submittal: (check all that apply)
☐ i. A Remedial Monitoring Report(s) submitted monthly to address an Imminent Hazard.
☐ ii. A Remedial Monitoring Report(s) submitted monthly to address a Condition of Substantial Release Migration.
☐ iii. A Remedial Monitoring Report(s) submitted concurrent with a IRA Status Report.
c. Number of Remedial Systems and/or Monitoring Programs: _____

A separate BWSC105A, IRA Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.



**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3 - **23246**

B. THIS FORM IS BEING USED TO (cont.): (check all that apply)

☐ 8. Submit an **IRA Completion Statement**.

☐ a. Check here if future response actions addressing this Release or Threat of Release notification condition will be conducted as part of the Response Actions planned or ongoing at a Site that has already been Tier Classified under a different Release Tracking Number (RTN) . When linking RTNs, rescoring via the NRS is required if there is a reasonable likelihood that the addition of the new RTN(s) would change the classification of the site.

b. Provide Release Tracking Number of Tier Classified Site (Primary RTN): -

These additional response actions must occur according to the deadlines applicable to the Primary RTN. Use the Primary RTN when making all future submittals for the site unless specifically relating to this Immediate Response Action.

☐ 9. Submit a **Revised IRA Completion Statement**.

(All sections of this transmittal form must be filled out unless otherwise noted above)

C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT IRA:

1. Identify Media Impacted and Receptors Affected: (check all that apply)

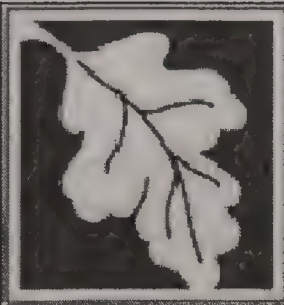
- ☒ a. Air ☐ b. Basement ☐ c. Critical Exposure Pathway ☒ d. Groundwater ☐ e. Residence
☐ f. Paved Surface ☐ g. Private Well ☐ h. Public Water Supply ☐ i. School ☐ j. Sediments
☒ k. Soil ☐ l. Storm Drain ☐ m. Surface Water ☐ n. Unknown ☐ o. Wetland ☐ p. Zone 2
☐ q. Others Specify: _____

2. Identify Oils and Hazardous Materials Released: (check all that apply)

- ☐ a. Oils ☒ b. Chlorinated Solvents ☐ c. Heavy Metals
☐ d. Others Specify: _____

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

- | | |
|--|---|
| <input type="checkbox"/> 1. Assessment and/or Monitoring Only | <input type="checkbox"/> 2. Temporary Covers or Caps |
| <input type="checkbox"/> 3. Deployment of Absorbent or Containment Materials | <input type="checkbox"/> 4. Temporary Water Supplies |
| <input checked="" type="checkbox"/> 5. Structure Venting System | <input type="checkbox"/> 6. Temporary Evacuation or Relocation of Residents |
| <input type="checkbox"/> 7. Product or NAPL Recovery | <input type="checkbox"/> 8. Fencing and Sign Posting |
| <input type="checkbox"/> 9. Groundwater Treatment Systems | <input type="checkbox"/> 10. Soil Vapor Extraction |
| <input type="checkbox"/> 11. Bioremediation | <input type="checkbox"/> 12. Air Sparging |



**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM**

Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3

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23246

D. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply, for volumes list cumulative amounts)

☐ 13. Excavation of Contaminated Soils

☐ a. Re-use, Recycling or Treatment

☐ i. On Site

Estimated volume in cubic yards _____

☐ ii. Off Site

Estimated volume in cubic yards _____

ii.a. Receiving Facility: _____

Town: _____ State: _____

ii.b. Receiving Facility: _____

Town: _____ State: _____

iii. Describe: _____

☐ b. Store

☐ i. On Site

Estimated volume in cubic yards _____

☐ ii. Off Site

Estimated volume in cubic yards _____

ii.a. Receiving Facility: _____

Town: _____ State: _____

ii.b. Receiving Facility: _____

Town: _____ State: _____

☐ c. Landfill

☐ i. Cover

Estimated volume in cubic yards _____

Receiving Facility: _____

Town: _____ State: _____

☐ ii. Disposal

Estimated volume in cubic yards _____

Receiving Facility: _____

Town: _____ State: _____

☐ 14. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: _____

b. Receiving Facility: _____

Town: _____ State: _____

c. Receiving Facility: _____

Town: _____ State: _____

☐ 15. Removal of Other Contaminated Media:

a. Specify Type and Volume: _____

b. Receiving Facility: _____

Town: _____ State: _____

c. Receiving Facility: _____

Town: _____ State: _____

☐ 16. Other Response Actions:

Describe: _____

☐ 17. Use of Innovative Technologies:

Describe: _____



**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3 - 23246

E. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B of this form indicates that an **Immediate Response Action Plan** is being submitted, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that an **Imminent Hazard Evaluation** is being submitted, this Imminent Hazard Evaluation was developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and the assessment activity(ies) undertaken to support this Imminent Hazard Evaluation comply(ies) with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

> if Section B of this form indicates that an **Immediate Response Action Status Report** and/or a **Remedial Monitoring Report** is(are) being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that an **Immediate Response Action Completion Statement** or a request to **Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard** is being submitted, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 9719

2. First Name: ILEEN S

3. Last Name: GLADSTONE

4. Telephone: 7817214012

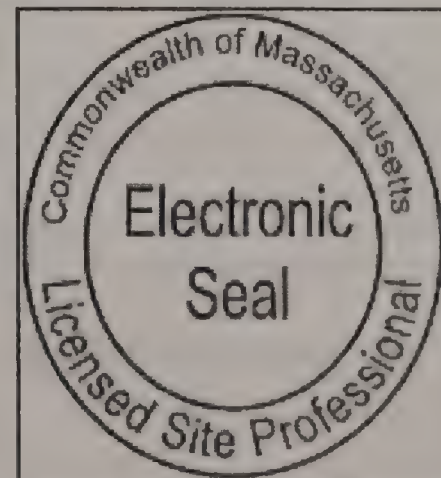
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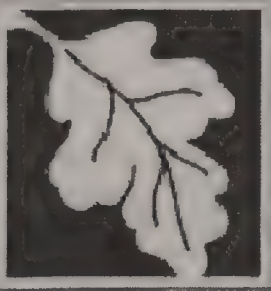
6. FAX:

7. Signature: ILEEN S GLADSTONE

8. Date: 05/09/2007
(mm/dd/yyyy)

9. LSP Stamp:





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3 - 23246

F. PERSON UNDERTAKING IRA:

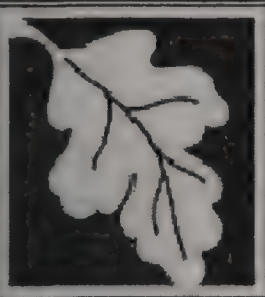
1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions
2. Name of Organization: **UNIFIRST CORP**
3. Contact First Name: **BRIAN** 4. Last Name: **KEEGAN**
5. Street: **68 JONSPIN RD** 6. Title: **ENV ENG MANAGER**
7. City/Town: **WILMINGTON** 8. State: **MA** 9. ZIP Code: **01887-0000**
10. Telephone: **8003477888** 11. Ext.: 12. FAX:

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING IRA:

- ☒ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter
- ☒ e. Other RP or PRP Specify: **OTHER PRPS**
- ☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
- ☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
- ☐ 4. Any Other Person Undertaking IRA Specify Relationship:

H. REQUIRED ATTACHMENT AND SUBMITTALS:

- ☐ 1. Check here if any Remediation Waste, generated as a result of this IRA, will be stored, treated, managed, recycled or reused at the site following submission of the IRA Completion Statement. If this box is checked, you must submit one of the following plans, along with the appropriate transmittal form.
- ☐ a. A Release Abatement Measure (RAM) Plan (BWSC106) ☐ b. Phase IV Remedy Implementation Plan (BWSC108)
- ☐ 2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.
- ☒ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health were notified of the implementation of an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.
- ☐ 4. Check here to certify that the Chief Municipal Officer and the Local Board of Health were notified of the submittal of a Completion Statement for an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.
- ☐ 5. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to the DEP Regional Office.
- ☒ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3

-

23246

I. CERTIFICATION OF PERSON UNDERTAKING IRA:

1. I, **BRIAN KEEGAN**, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: **BRIAN KEEGAN**
Signature

3. Title: **ENV ENG MANAGER**

4. For: **UNIFIRST CORP**
(Name of person or entity recorded in Section F)

5. Date: **05/10/2007**
(mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section F.

7. Street: _____

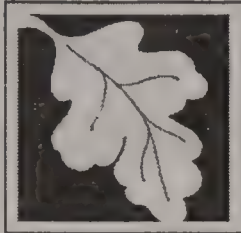
8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____

11. Telephone: _____ 12. Ext.: _____ 13. FAX: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

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Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3

-

26114

A. RELEASE OR THREAT OF RELEASE LOCATION:

1. Release Name/Location Aid: **NO LOCATION AID**
2. Street Address: **50 TUFTS ST**
3. City/Town: **SOMERVILLE** 4. ZIP Code: _____
5. UTM Coordinates: a. UTM N: **4694310** b. UTM E: **328046**
- ☐ 6. Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.
☐ a. Tier IA ☐ b. Tier IB ☐ c. Tier IC ☐ d. Tier II
- ☐ 7. Check here if this location is Adequately Regulated, pursuant to 310 CMR 40.0110-0114. Specify Program (check one):
☐ a. CERCLA ☐ b. HSWA Corrective Action ☐ c. Solid Waste Management
☐ d. RCRA State Program (21C Facilities)

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of Initial IRA Written Plan (if previously submitted): **11/15/2006**
(mm/dd/yyyy)
- ☐ 2. Submit an **Initial IRA Plan**.
- ☐ 3. Submit a **Modified IRA Plan** of a previously submitted written IRA Plan.
- ☐ 4. Submit an **Imminent Hazard Evaluation**. (check one)
☐ a. An Imminent Hazard exists in connection with this Release or Threat of Release.
☐ b. An Imminent Hazard does not exist in connection with this Release or Threat of Release.
☐ c. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release, and further assessment activities will be undertaken.
☐ d. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release. However, response actions will address those conditions that could pose an Imminent Hazard.
- ☐ 5. Submit a request to **Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard**.
- ☒ 6. Submit an **IRA Status Report**.
- ☐ 7. Submit a **Remedial Monitoring Report**. (This report can only be submitted through eDEP.)
a. Type of Report: (check one) ☐ i. Initial Report ☐ ii. Interim Report ☐ iii. Final Report
b. Frequency of Submittal: (check all that apply)
☐ i. A Remedial Monitoring Report(s) submitted monthly to address an Imminent Hazard.
☐ ii. A Remedial Monitoring Report(s) submitted monthly to address a Condition of Substantial Release Migration.
☐ iii. A Remedial Monitoring Report(s) submitted concurrent with a IRA Status Report.
c. Number of Remedial Systems and/or Monitoring Programs: _____
- A separate BWSC105A, IRA Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.



**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3 - 26114

B. THIS FORM IS BEING USED TO (cont.): (check all that apply)

☐ 8. Submit an **IRA Completion Statement**.

☐ a. Check here if future response actions addressing this Release or Threat of Release notification condition will be conducted as part of the Response Actions planned or ongoing at a Site that has already been Tier Classified under a different Release Tracking Number (RTN). When linking RTNs, rescoring via the NRS is required if there is a reasonable likelihood that the addition of the new RTN(s) would change the classification of the site.

b. Provide Release Tracking Number of Tier Classified Site (Primary RTN):

-

These additional response actions must occur according to the deadlines applicable to the Primary RTN. Use the Primary RTN when making all future submittals for the site unless specifically relating to this Immediate Response Action.

☐ 9. Submit a **Revised IRA Completion Statement**.

(All sections of this transmittal form must be filled out unless otherwise noted above)

C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT IRA:

1. Identify Media Impacted and Receptors Affected: (check all that apply)

- ☒ a. Air ☒ b. Basement ☒ c. Critical Exposure Pathway ☒ d. Groundwater ☒ e. Residence
☐ f. Paved Surface ☐ g. Private Well ☐ h. Public Water Supply ☒ i. School ☐ j. Sediments
☐ k. Soil ☐ l. Storm Drain ☐ m. Surface Water ☐ n. Unknown ☐ o. Wetland ☐ p. Zone 2
☐ q. Others Specify: _____

2. Identify Oils and Hazardous Materials Released: (check all that apply)

- ☐ a. Oils ☒ b. Chlorinated Solvents ☐ c. Heavy Metals
☐ d. Others Specify: _____

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

- | | |
|--|---|
| <input type="checkbox"/> 1. Assessment and/or Monitoring Only | <input type="checkbox"/> 2. Temporary Covers or Caps |
| <input type="checkbox"/> 3. Deployment of Absorbent or Containment Materials | <input type="checkbox"/> 4. Temporary Water Supplies |
| <input checked="" type="checkbox"/> 5. Structure Venting System | <input type="checkbox"/> 6. Temporary Evacuation or Relocation of Residents |
| <input type="checkbox"/> 7. Product or NAPL Recovery | <input type="checkbox"/> 8. Fencing and Sign Posting |
| <input type="checkbox"/> 9. Groundwater Treatment Systems | <input type="checkbox"/> 10. Soil Vapor Extraction |
| <input type="checkbox"/> 11. Bioremediation | <input type="checkbox"/> 12. Air Sparging |



**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3

-

26114

D. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply, for volumes list cumulative amounts)

☐ 13. Excavation of Contaminated Soils

☐ a. Re-use, Recycling or Treatment

☐ i. On Site Estimated volume in cubic yards _____

☐ ii. Off Site Estimated volume in cubic yards _____

ii.a. Receiving Facility: _____ Town: _____ State: _____

ii.b. Receiving Facility: _____ Town: _____ State: _____

iii. Describe: _____

☐ b. Store

☐ i. On Site Estimated volume in cubic yards _____

☐ ii. Off Site Estimated volume in cubic yards _____

ii.a. Receiving Facility: _____ Town: _____ State: _____

ii.b. Receiving Facility: _____ Town: _____ State: _____

☐ c. Landfill

☐ i. Cover Estimated volume in cubic yards _____

Receiving Facility: _____ Town: _____ State: _____

☐ ii. Disposal Estimated volume in cubic yards _____

Receiving Facility: _____ Town: _____ State: _____

☐ 14. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: _____

b. Receiving Facility: _____ Town: _____ State: _____

c. Receiving Facility: _____ Town: _____ State: _____

☐ 15. Removal of Other Contaminated Media:

a. Specify Type and Volume: _____

b. Receiving Facility: _____ Town: _____ State: _____

c. Receiving Facility: _____ Town: _____ State: _____

☒ 16. Other Response Actions:

Describe: _____

TEMPORARY INSTALLATION OF AIR PURIFIERS

☐ 17. Use of Innovative Technologies:

Describe: _____



**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3 - 26114

E. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B of this form indicates that an **Immediate Response Action Plan** is being submitted, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that an **Imminent Hazard Evaluation** is being submitted, this Imminent Hazard Evaluation was developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and the assessment activity(ies) undertaken to support this Imminent Hazard Evaluation comply(ies) with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

> if Section B of this form indicates that an **Immediate Response Action Status Report** and/or a **Remedial Monitoring Report** is(are) being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that an **Immediate Response Action Completion Statement** or a request to **Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard** is being submitted, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:

9719

2. First Name:

ILEEN S

3. Last Name:

GLADSTONE

4. Telephone:

7817214012

5. Ext.:

6. FAX:

7. Signature:

ILEEN S GLADSTONE

8. Date:

05/09/2007

(mm/dd/yyyy)

9. LSP Stamp:





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3 - 26114

F. PERSON UNDERTAKING IRA:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions
2. Name of Organization: UNIFIRST CORP
3. Contact First Name: BRIAN 4. Last Name: KEEGAN
5. Street: 68 JONSPIN RD 6. Title: ENV ENG MANAGER
7. City/Town: WILMINGTON 8. State: MA 9. ZIP Code: 01887-0000
10. Telephone: 8003477888 11. Ext.: 12. FAX:

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING IRA:

- ☒ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter
☒ e. Other RP or PRP Specify: PRP GENERIC OR NON-SPECIFIED
- ☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
- ☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
- ☐ 4. Any Other Person Undertaking IRA Specify Relationship:

H. REQUIRED ATTACHMENT AND SUBMITTALS:

- ☐ 1. Check here if any Remediation Waste, generated as a result of this IRA, will be stored, treated, managed, recycled or reused at the site following submission of the IRA Completion Statement. If this box is checked, you must submit one of the following plans, along with the appropriate transmittal form.
☐ a. A Release Abatement Measure (RAM) Plan (BWSC106) ☐ b. Phase IV Remedy Implementation Plan (BWSC108)
- ☐ 2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.
- ☐ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health were notified of the implementation of an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.
- ☐ 4. Check here to certify that the Chief Municipal Officer and the Local Board of Health were notified of the submittal of a Completion Statement for an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.
- ☐ 5. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to the DEP Regional Office.
- ☒ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3 - 26114

I. CERTIFICATION OF PERSON UNDERTAKING IRA:

1. I, **BRIAN KEEGAN**, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: **BRIAN KEEGAN** Signature 3. Title: **ENV ENG MANAGER**

4. For: **UNIFIRST CORP** 5. Date: **05/10/2007**
(Name of person or entity recorded in Section F) (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section F.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____

11. Telephone: _____ 12. Ext.: _____ 13. FAX: _____

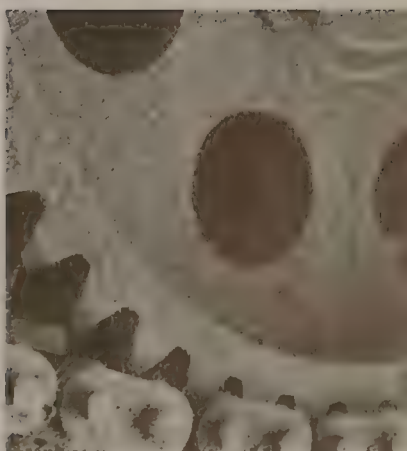
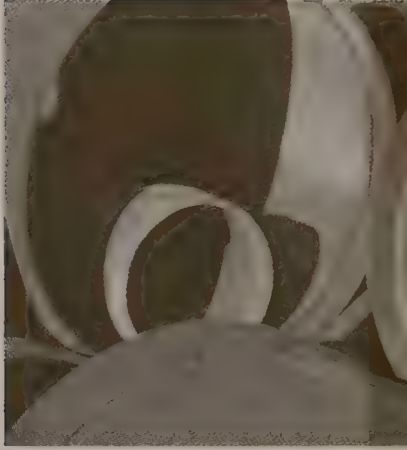
YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

5/10/2007 9:01:09 AM



Geotechnical
Environmental and
Water Resources
Engineering



Appendix B

Public Meeting Agendas and Attendance Lists

Sign-In Sheet
Please Print

12/13/06

	Name (and Affiliation)	Address and City	Zip Code
1	Rich Mangan (Resident)	33 Knowlton St. Som	02145
2	DAVID A Stiles (Resident)	37 Knowlton St Som	02145
3	Orlene Campbell	City of Somerville	
4	Gregory Bibber	53 State Boston	02109
5	Ileen Gladstone	GEI Consultants	01890
6	Mary Burke	28 Blackstone, Boston	02210
7	Dolores Dillies	11 Traft St. Fairview	02145
8	John Samarra	50 Rutland Pier Furlong MA	01901
9	Robert Smith	675 SOMERVILLE AVE.	02143
10	Pat Ball	675 Somerville Ave	02143
11	Gregory Pappas	9 Sherman St Som -	02129
12	John Matthews	9 Sherman St Som -	02129
13	William Lordberg	122 Main St, Cambridge	02139
14	Betty Dabkowski, Group Operations Manager	34 Enterprise Road, Billerica MA	01821
15	Lara Ryan	248 Mishawum Road Woburn MA	01801
16	MARK Jewell	248. Mishawum Rd Woburn MA	01801
17	Alan Ball	22 Dell St. Somerville	02145
18	Pat Russell	22 Dell ST Somerville	02145
19	Genevieve Jones GMJ1@RCN.COM	126 Dell St	2
20	Anthony Lombardi DiBorloma	40 Broadway	
21	Anne Whalen	6 Dell St. Why not nana@hotmail.com.	
22	George Silva	10 Dell St. Somerville	02145
23	Kevin Griffin	14 Dell ST. Somerville	02145
24			

Please Join

Ward 1 Alderman William Roche
Ward 1 School Committee Member Maureen Bastardi
and
The Mayor's Office of Strategic Planning &
Community Development

**For a neighborhood meeting to update the community
regarding**

50 Tufts Street

Topics of discussion will include:

- Results of the Capuano School Air Quality Tests
- Next Steps at the Capuano School
- Update on the surrounding areas well testing

**WHEN: Tuesday, February 6, 2007
 6:30 PM**

**WHERE: The Capuano Early Education Center
 150 Glen Street**

To forward questions for GEI in advance please contact Peter Mills,
Environmental Program Manager at pmills@ci.somerville.ma.us or (617)
625-6600 ext.2106 and for general information please contact Carlene
Campbell, SPCD Community Outreach Director at (617) 625-6600 ext. 2517
or ccampbell@ci.somerville.ma.us.



Agenda

Neighborhood Meeting

Michael E. Capuano Early Childhood Center

2/6/2007

6:30 PM

Agenda topics

Background Information

Ileen Gladstone, P.E., LSP
GEI Consultants, Inc.

Potential Health Concerns

Brian Magee, PhD.,
AMEC Earth & Environmental

Capuano Center Activities

Ileen Gladstone and
Jack McCarthy, ScD., CIH
Environmental Health & Safety, Inc.

Indoor Air Testing

HVAC Optimization

Subslab Depressurization System

System Monitoring

Next Meeting

Ileen Gladstone

3/14/06.

Contact Information

Name	Street Address	Mailing Address	Home Phone #	Cellular Phone #	Email address	Best time to call
Candace Campbell		93 Highland Ave Somerville, MA 02143	(617) 625-6600 ext 400 400-2517	N/A	ccampbell@ci.somerville.ma.us	
Vinhal V-Deshpande		1 Franer Rd Somerville, MA 02144	617-625-6600 X5030			
MARIE C. ENSIGN	GEI	WINCHESTER				
Steve Aquilino	Unifirst	Wilmington MA				
Krista Wolfe	GEI	Winchester		(781) 721-9909	Kwolpe@geiconsultants.com	
JEFF HARETANO	19 TUFTS ST	Somerville		857-222-4620		
Dolores Devello	11 Tufts St	Somerville 02145	(617) 628-5238	—	ddevello@earthlink.net	anytime
Rickie P Payne	27 Tufts St	Somerville 02145	617-625-7536		PAPAS@RCN.COM	
Paul Gapi	17 Tufts	Somerville	617-625-7256			
AVANI CAMPOS	4 TUFTS ST	SOMERVILLE	617-501-6806		PO Box 423 SOMERVILLE, MA 02143	ANYTIME
John Breen	25 Tuft St	Somerville	617-625-2468			
Ireen Gladstone	GEI	Windsor	617-742-2588			

50 Tufts Street Neighborhood Meeting

Agenda

- Overview of Regulatory Process
- Historic and Recent Subsurface Investigations
- Historic and Recent Indoor Air Testing
- Evaluations of Nearby Residences and Buildings
- Capuano Early Childhood Center
- 50 Tufts Street
- Next Steps

February 26, 2007, 7:00 PM, The Holiday Inn

Sign-in Sheet

Neighborhood Meeting -- February 26, 2007

Name	Address	Telephone	Email Address
Brian Keegan	UNIFIRST		
MARY C. ENSIGN	GEI CONSULTANTS	781-721-4010	mensing@geiconsultants.com
Brian Magee	AMEC	978-692-9090	brian.magee@amec.com
Nathan Brodeur	Burdwin Procter	617-570-8263	NBrodeur@goodwinprocter.com
JACK MCCARTHY	ELITE	617-964-8550	JPMCCARTHY@ELITEINC.COM
T Coscarelli	HLPS	978-772-1105	tlcoscarelli@keweenawprojects.com
AUDI GUHA	Somerville Journal	617-629-3391	aguhac@jnc.com
Sarah Gibson	6 Beacon St Suite 1100 Boston MA 02108	617 573-9488 x202	sgibson@sgibsonlaw.com
Gregory Fisher	GP	617 570 1621	gfib62@goodwinprocter.com
Ileen Gladstone	GEI		
Irene Dake	DEP		

Name	Address	Telephone	Email Address
tony cafrente	30 Alston St Som. 02143	(617) 590-4930	TRAFUENTE@FLAGGRAPHICS.COM
Norman M. Whalen	13 DELL ST SO M. 02145	617-625 2591	
Robert McWaters	218A Summer St CITY OF SOMERVILLE	(617) 623-7053	
PETER MILLS	93 HIGHLAND AVE	(617) 625 6600 x2106	p.mills@ci.somerville.ma.us
Bill Roche	17 MATTHEW ST	617 623 6661	Aldan@roche@Coed.net
Pat Russell	22 Dell St	617-776-6862	perussell@aol.com
PAUL VALENTE	194 MORTON ST	617 438-0108	
Cindee Compisano	Elite		
R. John P. Papa	27 Telford St		RRP@REN.COM
DAVID A STILES	37 Knowlton St	617-666-1872 a116178931303	
June M. Whalen	60 Dell St	617-625-8933	Wynot@ren.com
Norman Fine	121-123 Washington	617-625-9067	finer@earthlink.net
Alex Piriz	7 S. ZAMBS AVE.	617-776-8898	ibis@ren.com

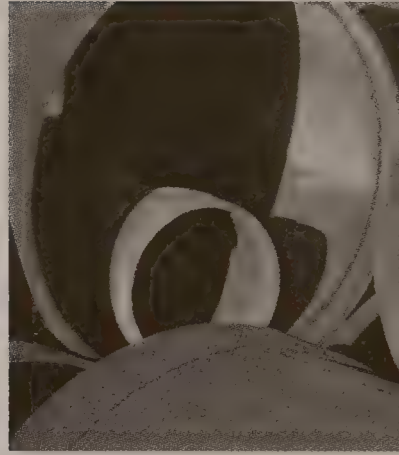
Name	Address	Telephone	Email Address
Genevieve Jones	16 Dew ST. 02145	617-776-4926	GMJ1@RCN.COM
George Silva	10 Dell St.	617-625-6570	
RICH MANGAN	33 Knowlton ST	617 628 0677	
James Don Barry	23 Knowlton St.	617 625-5720	
Natalia Farias	152 Glen St Corner. 91 College St. #1 WALTHAM, MA	617-776-7434	WINDFOLLOWERS7@HOTMAIL.COM
ROB JANCKERT			
ARVIND PATEL	5 Creston Ave Burlington MA 01803	781-266-7830	
Dennis Sullivan	8 Florence St	617/628/1575	Albermar.D/Sullivan@aol.com
Charles Schofield	9 Knowlton St	617-625-8098	
Donald Knowlton	19 Tuckess St	617-625-3469	
Nicholas J Stiles SPD	Som. Rd	617-625-1600	
MÓNICA CHARRELLA	3 Knowlton St #2	617-787-0557 x17	
Roberto Silva	424 Broadway	617-666-8200	

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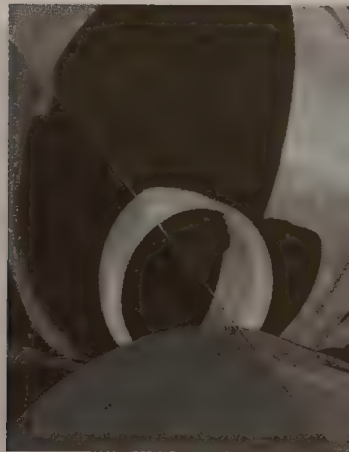


Appendix C

Summa Canister Certifications and Air Sampling Laboratory Data



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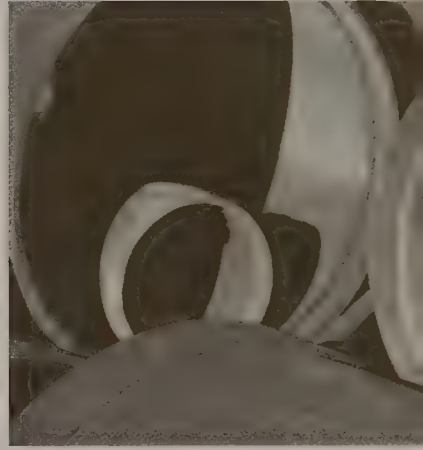
Appendix D

Soil Vapor and Sub-Slab Soil Vapor Testing Laboratory Data

(See CD in Appendix C)



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Engineering



Appendix E

**Capuano Center HVAC System Inspection and UV Sealing Report,
Prepared by EH&E**

**ASSESSMENT AND AIR MONITORING
AT THE
MICHAEL E. CAPUANO EARLY CHILDHOOD CENTER
150 GLEN STREET
SOMERVILLE, MASSACHUSETTS**

Prepared For:

**UniFirst Corporation
68 Jonspin Road
Wilmington, MA 01887**

Prepared By:

**Environmental Health & Engineering, Inc.
60 Wells Avenue
Newton, MA 02459-3210**

**EH&E Report #14889
May 8, 2007**

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Table 4.5	Capuano Early Childhood Center Unit Ventilator Air Sampling Screening Results for January 16, 2007

LIST OF ABBREVIATIONS AND ACRONYMS

AHU	air handling unit
building	150 Glen Street, Somerville, Massachusetts
Center	Michael E. Capuano Early Childhood Center
cfm	cubic feet per minute
CVOC	chlorinated volatile organic compound
DPW	Department of Public Works
EH&E	Environmental Health & Engineering, Inc.
GEI	GEI Consultants Inc.
Honeywell	Honeywell International Inc.
HVAC	heating, ventilating, and air-conditioning
ppb	parts per billion
RTU	rooftop air handling unit
TVOC	total volatile organic compound
VOC	volatile organic compound

1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

Environmental Health & Engineering, Inc. (EH&E) conducted an indoor environmental assessment at the Michael E. Capuano Early Childhood Center (the Center), located at 150 Glen Street, Somerville, Massachusetts (the building). The purpose of the investigation was to evaluate and address soil vapor intrusion as a potential transfer pathway for chlorinated volatile organic compounds (CVOCs) to affect indoor air quality at the Center. EH&E's investigation included assessment of building performance and mechanical ventilation system operation, environmental measurements, and the assessment of potential air transfer pathways. EH&E's on-site activities were conducted between December 26, 2006, and March 8, 2007, and consisted of the following elements:

- **Mechanical systems and building evaluation**, including the assessment of building pressurization, operating schedules, and automatic temperature control settings.
- **Indoor environmental measurements and analyses**, including screening for CVOCs to identify potential transfer pathways into the building.
- **Indoor environmental profile development**, including a review of potential sources or conditions that may negatively impact indoor environmental quality.

Section 1.2 presents a summary of EH&E's findings and the remedial actions taken based on the investigations conducted at the Center. Note that this report is subject to the limitations provided in Appendix A.

1.2 SUMMARY OF FINDINGS

The initial investigation conducted by EH&E in December 2006 found the building to be operating at a negative pressure with respect to outdoors largely as a result of modifications to operating settings in the building's automatic temperature control

system, resulting in the system operating in a manner inconsistent with its design specifications. The significance of this finding was that operating the building at a negative differential pressure relative to outdoor conditions may result in air being drawn in from unintended pathways such as through the building envelope or penetrations through the floor slab, rather than only through the air handling equipment outdoor air intakes. EH&E reviewed the “as found” settings and building design documents and developed steps to be implemented to ensure that the building operated at an overall positive pressure with respect to outdoors. These steps included adjustments to the current minimum outdoor air damper settings, modifying the building occupancy schedules, adjusting fan speeds, and disabling of occupancy sensors that shut down air delivery systems during periods of no occupancy.

Once it was established that the building was operating at positive differential pressure relative to outdoor conditions, GEI Consultants Inc. (GEI) collected indoor air samples which indicated that while concentrations had decreased, CVOCs persisted in three first floor classrooms on the southeast corner of the classroom wing. Given this finding, EH&E investigated potential transfer pathways for soil gas to enter the building and recommended and oversaw remedial action to address these pathways. EH&E identified one potential pathway through the classroom unit ventilators. Investigation determined that CVOCs could be drawn into the classrooms through a gap between the floor slab and foundation wall at the back of the unit ventilator as well as through cracks in the floor slab beneath the unit ventilator. To eliminate these pathways, all first floor unit ventilators on the south side of the classroom wing were removed and all observed gaps and penetrations were sealed.

Following the activities described above and GEI’s installation of a sub-slab depressurization system, CVOCs were not detected in any of the indoor air samples collected at the Center. The building is currently operating under positive differential pressure (as confirmed by the results of long term differential pressure measurements conducted in specific classrooms) and the building mechanical systems continue to run on a 24 hour, seven day per week operating schedule. EH&E anticipates this operating schedule will remain in effect until the summer recess, at which time the schedule will be evaluated through on-site pressure monitoring and air sampling.

2.0 BACKGROUND

2.1 PURPOSE AND SCOPE

In December 2006 EH&E was retained by UniFirst to assist GEI in assessing indoor air quality inside the Center. EH&E's initial assessment was conducted on December 26, 2006, and was undertaken in conjunction with a series of indoor air sampling rounds carried out by GEI. During the Center vacation week, the activities undertaken by EH&E at the Center focused on assessing current building operation including outdoor air ventilation and building pressurization and providing recommendations for modifications to ensure the operation of the systems did not induce CVOCs to flow from beneath the sub-slab into the building. Information describing EH&E's field activities is discussed in Section 4 of this report.

2.2 BUILDING DESCRIPTION

The Capuano Early Childhood Center is a two-story slab on grade structure that occupies a footprint of approximately 45,500 square feet. The Center was constructed in 2003 and is divided into two wings, designated on the architectural drawings as the "classroom wing" and the "assembly wing." The classroom wing is on the east side of the building and comprises classroom spaces and work rooms on both the first and second floors. The first floor of the assembly wing is on the building's west side and comprises the cafetorium (cafeteria/auditorium) and kitchen, the gymnasium, administrative offices, and a day care classroom. The second floor includes music and art classrooms, the library/media center, and the computer classroom. A floor plan of the Center is shown in Figures 2.1 and 2.2.



Figure 2.1 First Floor, Capuano Early Childhood Center



Figure 2.2 Second Floor, Capuano Early Childhood Center

3.0 BUILDING MECHANICAL SYSTEMS

3.1 SYSTEM DESCRIPTION

The heating and ventilating systems serving the Center consist of individual classroom unit ventilators and central air handling systems. All spaces, including classrooms, are fully air conditioned. Heating is provided through the use of hot water and cooling primarily through the use of chilled water. A single dual temperature water loop is used to convey both hot and chilled water.

During the heating season, hot water boilers and hot water circulating pumps operate to maintain loop temperature and flow rate. Hot water boilers are located in the upper mechanical room on the southwest side of the building. Hot water loop temperature is controlled based on a reset schedule that modulates loop temperature based on outside air temperature. The system is designed to provide automatic changeover to cooling through the use of a three-way control valve. This changeover sequence is equipped with a time delay to prevent hot water from circulating through the chillers and chilled water from circulating through the boilers. EH&E understands that building operators currently institute a manual changeover based on outdoor temperature conditions. During the cooling season, the air-cooled chiller (located on the building roof on the southwest side) and chilled water circulating pumps operate to maintain a specified chilled water supply temperature.

3.1.1 Classroom Systems

Classrooms located on the first and second floor of the classroom wing are ventilated and thermally conditioned by individual unit ventilators located along the classrooms' outside perimeter wall. The unit ventilators provide both heating and cooling for each classroom through the use of a two pipe heating/cooling coil. Supplemental heating for each classroom is provided through the use of baseboard hot water radiation.

Temperature control of classrooms equipped with unit ventilators is achieved through the use of individual thermostats located in each classroom. The room thermostat controls the modulation of the unit ventilator face and bypass damper to maintain the set point temperature of the thermostat. With the building in the heating mode, hot water is

delivered to the unit ventilator coil at a full flow rate, while the face and bypass damper modulates to divert more or less air to the coil, thus changing the discharge air temperature. During the cooling mode, a similar sequence occurs except that chilled water is delivered to the coil.

Outdoor air is provided to each classroom through a unit ventilator outdoor air intake that penetrates the outside wall of the building. When operating, the unit ventilator outdoor air intake damper is maintained at a pre-set minimum position to provide the minimum required classroom ventilation. Each unit ventilator is equipped with an economizer control cycle which varies the amount of outdoor air delivered to the space during periods where outdoor air conditions allow for free heating or cooling of the space. Supplemental ventilation for exterior classrooms is provided by natural means through the use of operable windows. Exhaust air is relieved from the classrooms through exhaust fans located on the building roof.

Each classroom is equipped with a space occupancy sensor to sense whether or not the classroom is occupied. These sensors are programmed to de-energize the unit ventilator fan and close the outdoor air damper when the room is sensed as unoccupied during Center hours.

3.1.2 Central Systems

Two rooftop air handling units (RTU) serve the administrative wing and portions of the classroom wing. RTU-1 (located on the building roof on the northwest corner) provides ventilation and thermal conditioning of spaces on the northwest corner including the first floor administrative offices and health suite, the daycare suite, and central corridor. RTU-1 also serves the second floor library/media center, computer classroom, and parent/teacher resource rooms.

RTU-2 (located on the roof of the classroom wing) provides ventilation and thermal conditioning of the first and second floor central corridors of the classroom wing as well as the interior teacher resource rooms on those floors.

RTU-1 and RTU-2 are designed as variable air volume systems where air volume delivery is controlled through the use of variable speed drives. Supply air fan speed on both units is controlled through the use of a static pressure sensor located in the supply air duct work at a position downstream of the fan. RTU-1 is equipped with a dedicated return fan. The return fan modulates speed to control return airflow at a fixed offset to the supply air flow. This sequence ensures that the RTU takes in a fixed amount of outdoor air at all times. RTU-2 is not equipped with a return fan.

Both RTU-1 and RTU-2 supply air at a fixed discharge temperature. For RTU-1, supply air is conditioned through the use of a direct expansion cooling coil and heated through the use of a hot water heating coil. Cooling for RTU-2 is achieved through the use of a chilled water coil (supplied by the building's air cooled water chiller). Both units are equipped with an outdoor air economizer designed to vary the outdoor air when outdoor air temperature conditions are appropriate.

The gymnasium and cafetorium/kitchen (and custodial support spaces) are ventilated and thermally conditioned via air handling units AHU-1 and AHU-2, respectively. AHU-1 and AHU-2 are designed as constant air volume systems delivering a mixture of outdoor air and air recirculated from the space. AHU-1 is equipped with a single speed supply fan while AHU-2 operates with a two-speed supply fan where the fan is operated at high speed whenever the kitchen exhaust system is operating. Neither unit has a return air fan. Both AHU-1 and AHU-2 provide outdoor air through a single outdoor air intake plenum located on the west side of the upper mechanical room. Both units are designed to operate with two minimum outdoor air settings, depending on occupancy, and the operational status of the kitchen exhaust system.

Cooling and heating of supply air of AHU-1 and AHU-2 is achieved via chilled water and hot water coils. For AHU-1, coil control valves and economizer dampers maintain the gymnasium's space temperature set point. For AHU-2, coil control valves and economizer dampers maintain a discharge air temperature set point while hot water reheat coils (controlled through space thermostats) are provided to maintain space temperature as required.

4.0 FIELD INVESTIGATION

EH&E conducted field activities at the Center between December 26, 2006, and March 8, 2007. Field activities were conducted in collaboration with GEI and included assessing indoor air quality and building operating conditions, providing guidance on recommended changes to building mechanical system operation, and investigating potential transfer pathways for CVOCs to enter the building. A summary of EH&E's activities is outlined below and described in full in the text to follow.

- Assess and document building performance prior to the initiation of indoor air sampling to be conducted by GEI. Conduct walkthrough surveys of the Center to identify potential volatile organic compound (VOC) sources and representative locations for GEI's sampling plan.
- Develop and implement changes in building operation following the completion of GEI's initial air sampling round. These changes were made in order to increase outdoor air ventilation and provide a positively pressurized building.
- Investigate potential transfer pathways for CVOCs to enter the building. Recommend and direct remedial action to address these pathways.

Monitoring methods are provided in Appendix B.

4.1 BUILDING PERFORMANCE ASSESSMENT

An initial assessment of the Center was conducted by EH&E on December 26, 2006, in conjunction with a series of indoor air sampling rounds conducted by GEI. The goal of the initial assessment was to assess the current operational status of the Center in terms of outdoor air ventilation and building pressurization prior to the collection of GEI's indoor air samples. The findings of this assessment were important to understand whether the current building performance and automatic control settings could contribute to the introduction of soil gas vapor into the Center, primarily through the floor slab.

EH&E also conducted a walkthrough survey of the Center to screen for VOCs using a portable photoionization detector (PID) and conducted an inventory of chemicals stored throughout the Center. The purpose of the walkthrough VOC screening and inventory were to document potential sources of VOCs and to provide guidance in the selection of indoor air sampling sites.

4.1.1 As Found Conditions

On December 26, 2006, EH&E's first task was documentation of the current control settings programmed into the Center's energy management system including heating, ventilating, and air-conditioning (HVAC) equipment operating schedules, minimum outside air damper settings, and building exhaust system status. In order to evaluate the building at a fixed reference point, EH&E worked with the building operator, Charlie Aliano, Somerville Department of Public Works (DPW), to temporally modify the control settings such that the building air handling equipment were set to operate at their minimum outdoor air setting. This condition represented a "worse case" in terms of building differential pressure.

Following confirmation that the building air handling systems were set to operate in their minimum outdoor air setting, EH&E conducted a walkthrough survey to document overall building pressure with respect to outdoors. Measurements were conducted throughout the first floor at corridor entry/exit doors and within multiple classrooms and support spaces on the first floor. Results of these measurements are presented in Table 4.1.

Table 4.1 Results of Measurements for Differential Pressure at Capuano Early Childhood Center, Somerville, Massachusetts, December 26, 2006	
Measurement Location	Differential Pressure Measured from Location with Respect to Outdoors (inches of water)
First floor front entry (west side)	-0.020
Principles office	-0.023
Classroom 108	-0.021
First floor north entry	-0.022
Classroom 121	-0.025
Classroom 125	-0.024
Classroom 133	-0.020
Classroom 137	-0.024
Classroom 141	-0.022
Classroom 145	-0.026
First floor east entry	-0.020
Classroom 146	-0.026
Classroom 142	-0.025
Classroom 138	-0.023
Classroom 134	-0.021
Classroom 126	-0.020
Classroom 122	-0.018
First floor south entry (at stairwell)	-0.022

As shown in Table 4.1, EH&E found the Center to be operating at a negative pressure with respect to outdoors by approximately 0.02 inches of water. Operating a building at a positive pressure with respect to outdoors is considered good engineering practice because it prevents air from entering the building through unintended openings such as leakage through the building envelope or cracks in the floor slab. Positive pressurization also ensures that all air enters the building through the outdoor air intakes, so that ventilation air is properly filtered and conditioned prior to discharge to occupied zones. Further investigation of the building's air handling and exhaust systems was conducted by EH&E to determine possible causes of this condition.

Review of the building mechanical design drawings indicated that the building was intended to operate at a positive pressure with respect to outdoors given that more make-up air was to be provided than exhausted via the mechanical exhaust systems. Evaluation of the unit ventilator, air handling unit, and rooftop unit outdoor air damper settings programmed into the energy management system showed that they varied and were all set between 15 – 20% outdoor air, which is lower than the minimum settings specified in the design drawings. In addition, inspection of unit ventilator fan speeds

found that the fans' speed selector settings varied from classroom to classroom (low, medium or high), and many units were set to operate at low or medium settings. Further, EH&E found that the return fan for RTU-1 (serving the administrative and assembly wing) was operating with a small delivery offset from the RTU-1 supply fan, limiting the volume of make-up air provided from this unit.

Classroom occupancy sensors were also found to be shutting down the unit ventilator (as is appropriate per the design intent) when the classrooms were sensed as unoccupied resulting in a decrease in makeup air. Given that the exhaust systems serving the classrooms remain in operation regardless of occupancy, the shutdown of the unit ventilators resulted in the classrooms operating at negative pressure with respect to outdoors.

4.1.2 HVAC and Control System Modifications

Based on the findings of the December 26, 2006, site assessment, EH&E developed a list of proposed changes to building operation with the goal of positively pressurizing the building (particularly the first floor) with respect to outdoors and providing additional outdoor air ventilation. On December 27, 2006, EH&E met at the Center with Mr. Aliano (Somerville DPW) to implement these changes. There were certain modifications that could be completed during the December 27, 2006, site visit, while other changes required assistance from the HVAC controls contractor, Honeywell International Inc. (Honeywell). Working with both Honeywell and Somerville DPW, EH&E completed the necessary changes over the course of the Center vacation week. Between December 27, 2006, and January 4, 2007, EH&E verified modifications made to the building mechanical systems and control settings in order to bring the building into a positive differential pressure condition with respect to outdoors. The following modifications were made in collaboration with Somerville DPW and Honeywell.

December 27, 2006, Modifications

The minimum outdoor air damper position for unit ventilators serving classrooms 121, 125, 133, 137, 141, and 145 were increased to 41%. The minimum outdoor air damper position for unit ventilators serving classrooms 122, 126, 134, 138, 142, and 146 were

increased to 36%. In the “as found” condition, all unit ventilators were programmed with a minimum outdoor air damper position of 15 – 20%. The increase in the minimum settings for these unit ventilators brought these systems up to the minimum settings specified in the design drawings. In addition, all unit ventilators (first and second floors) were manually switched to their “high” fan speed setting.

Minimum outdoor air damper positions for the central air handling units and rooftop units were also increased. Outdoor air damper minimums for RTU-1 and RTU-2 were increased to 41% and 29%, respectively, while outdoor air damper minimums for AHU-1 and AHU-2 were set to 15% and 43%, respectively. These changes also brought these systems up to the minimum settings specified in the design drawings.

As part of the recommended modifications, EH&E also proposed that the existing classroom occupancy sensors be disabled such that the unit ventilators remain operating and outdoor air dampers remain open even when the classrooms are sensed as being unoccupied. However, this change could not be implemented on December 27, 2006, given that it required Honeywell to modify programming. Following the changes made on December 27, 2006, EH&E conducted a second round of building pressure measurements and found that the building still operated at negative pressure with respect to outdoors.

January 2, 2007, Modifications

On January 2, 2007, EH&E initiated additional changes through the energy management system in collaboration with Mr. Aliano (Somerville DPW) and Honeywell representatives. The minimum outdoor air damper position for unit ventilators serving classrooms 122, 126, 134, 138, 142, and 146 were increased from 36% to 41% while the minimum outdoor air damper position for unit ventilators for all second floor classrooms were increased to 41%. In addition, as recommended previously, the occupancy sensor control sequence for the unit ventilators was disabled so that the unit ventilators and outdoor air dampers remained in normal operation at all times. The overall building schedule was also modified such that the mechanical systems (unit ventilators and air handling units) would operate 24 hours per day, seven days per week. Originally the systems were scheduled to operate between approximately 7 a.m. and

3 p.m. In order to increase the differential between make-up air and exhaust, the general exhaust fans, F2 and F5, were also shut down and the duct covered at the roof level with polyethylene sheeting. These exhaust fans provided general exhaust of classrooms and corridors.

Following the completion of these modifications, EH&E conducted a series of measurements and found the building to be operating at a neutral to slightly positive differential pressure with respect to outdoors.

January 4, 2007, Modifications

On January 4, 2007, EH&E initiated an additional change through the energy management system in order to increase the differential between make-up air and exhaust. Working with Mr. Aliano (Somerville DPW), EH&E adjusted the return fan for roof top unit RTU-1 to 50% load in order to increase building pressure. In addition, EH&E observed significant air transfer from the first floor kitchen and storage area up through to the second floor mechanical room and out the roof hatch. This air transfer pathway was eliminated by specifying the door between the storage room and the corridor should always be in the closed position. Once this pathway was eliminated, a substantial increase in building pressure was noted.

Following the completion of these modifications, EH&E conducted a walkthrough survey to document overall building pressure with respect to outdoors on January 4, 2007, and again on January 5, 2007. Results of these measurements are presented in Table 4.2.

Table 4.2 Results of Measurements for Differential Pressure at Capuano Early Childhood Center, Somerville, Massachusetts, January 4 and 5, 2007	
Measurement Location	Differential Pressure measured from Location with Respect to Outdoors (inches of water)
<i>January 4, 2007</i>	
First floor front entry (west side)	+0.012
First floor north entry	+0.018
First floor east entry	+0.010
Classroom 146	+0.002
Classroom 142	+0.004
Classroom 138	+0.003
First floor south entry (at stairwell)	+0.013
First floor south entry (at custodial office)	+0.016
<i>January 5, 2007</i>	
First floor front entry (west side)	+0.020
First floor north entry	+0.030
First floor east entry	+0.022
Classroom 146	+0.020
Classroom 142	+0.025
Classroom 138	+0.020
First floor south entry (at stairwell)	+0.020
First floor south entry (at custodial office)	+0.020

4.2 BUILDING PRESSURE MONITORING

On January 10, 2007, EH&E initiated continuous monitoring of building differential pressure in selected classrooms to document conditions over a longer time period. The primary purpose of this monitoring was to document that the changes made to the building mechanical systems and control settings (Section 4.1) resulted in a building that was positively pressurized with respect to outdoors over the wide range of building operating conditions and meteorological conditions.

Differential pressure monitoring devices were installed in classrooms 145 and 146 and were set up at the perimeter of the classrooms to measure differential pressure between the classroom and outdoors. Data logging for both monitors was set for five minute sampling and recording intervals and the monitors recorded data from January 10 through February 22, 2007. The results of the monitoring are summarized in Table 4.3.

Table 4.3 Summary of Differential Pressure Measurements Recorded Continuously in Classrooms 145 and 146, Capuano Early Childhood Center, Somerville, Massachusetts, January 10 through February 22, 2007

Classroom Pressure Range Recorded with Respect to Outdoors (inches of water)	Classroom 145 ⁽¹⁾ Percent of Time within Indicated Range	Classroom 146 ⁽²⁾ Percent of Time within Indicated Range
Less than -0.02 (negative)	1.0%	1.9%
Between -0.01 and -0.02 (negative)	1.9%	3.0%
Less than 0 to -0.01 (negative)	10.2%	11.4%
Neutral pressure	0.1%	0.0%
Greater than 0 to + 0.01 (positive)	57.3%	34.9%
Between +0.01 and +0.02 (positive)	22.4%	37.1%
Greater than 0.02 (positive)	7.2%	11.8%
<p>(1) Represents differential pressure measurements recorded continuously between January 10 and February 22, 2007.</p> <p>(2) Represents differential pressure measurements recorded continuously between January 10 and February 22, 2007. Summary statistics excludes data between January 31 and February 2, 2007, during which the unit ventilator serving this classroom was removed to facilitate inspection and sealing operations.</p>		

Review of the logged differential pressure data indicates that the classrooms operated at a positive pressure with respect to outdoors for the majority of the monitoring period. Classrooms 145 and 146 were positively pressurized with respect to outdoors for approximately 87% and 84% of the time, respectively. The periods corresponding to negative pressure conditions may have resulted from brief intermittent fluctuations from positive to negative and back to positive. These brief fluctuations are generally attributable to varying wind pressure against the building.

4.3 SCREENING FOR TOTAL VOLATILE ORGANIC COMPOUNDS

Between December 26, 2006, and January 13, 2007, EH&E conducted field screening for total volatile organic compounds (TVOCs) at the Center. The initial screening rounds for TVOCs were conducted throughout all areas of the first floor and results used to document general background levels, identify potential source areas that may require additional investigation, and as an aid in selecting indoor air sampling locations within the building (indoor air sampling was initiated by GEI on December 27, 2006). Screening for TVOCs was also conducted following the selected modifications made to the building's HVAC systems to document the potential impacts of these changes. A

summary of the TVOC measurement surveys conducted at the Center is presented in Table 4.4. Results of these measurements are provided in Appendix C.

Table 4.4 Summary of Walkthrough Survey Rounds for the Identification of Total Volatile Organic Compounds, Capuano Early Childhood Center, Somerville, Massachusetts	
Date	Description
December 26, 2006	Survey conducted to document general background levels throughout the Center and to identify potential source areas or source transfer pathways
January 1, 2007	Survey conducted to document TVOC background levels following modifications made to building operation and control settings and to identify potential transfer pathways for VOCs into the building
January 2, 2007	
January 4, 2007	
January 5, 2007	
January 6, 2007	
January 11, 2007	Survey conducted to investigate classroom unit ventilators as a potential transfer pathway for VOCs into the building
January 13, 2007	
TVOC total volatile organic compound VOC volatile organic compound	

The results from the walkthrough conducted on December 26, 2006, showed TVOC levels throughout the Center to be generally low and similar to levels measured outdoors. TVOC measurements surveyed at floor penetrations on the first floor (i.e., plumbing cleanouts, lavatory bases) showed slightly higher levels when compared to general air background levels, suggesting the floor penetrations may provide potential transfer pathways for VOCs. The December 26, 2006, survey did not indicate any significant difference in TVOC levels from classroom to classroom, or between different areas of the Center.

A follow-up TVOC survey was conducted by EH&E on January 1 and 2, 2007, to document relative differences in TVOC levels after changes were made to HVAC system operation and to identify potential transfer pathways for VOCs. Special attention was paid to classrooms 138, 142, and 146 given that GEI's December 27, 2006, sampling identified somewhat elevated levels of CVOCs in classroom 146. The results of this survey showed TVOC levels throughout the Center to be generally low and similar to TVOC levels measured outdoors. In classrooms 138, 142, and 146, TVOC levels were low, while concentrations measured in the classroom bathrooms and at the toilet flanges

within the bathrooms were elevated, suggesting that VOCs may be entering through these penetrations.

On January 4, 2007, EH&E completed the modifications to the building HVAC systems and control settings necessary to ensure that the building was operated at a positive pressure with respect to outdoors (Section 4.1.2). Following the completion of these modifications, screening for TVOCs was conducted throughout the building on January 4, 5, and 6, 2007. The screening survey focused on the classroom wing and in particular the classrooms on the southeast corner of the Center to document background TVOC levels compared to outdoors and to assess potential transfer pathways of VOCs into the classrooms. The screening survey did not show any elevated levels of TVOCs throughout the Center.

The assessment of potential transfer pathways is discussed in Section 4.4.

4.4 EVALUATION OF POTENTIAL TRANSFER PATHWAYS

Indoor air sampling conducted by GEI on December 27, 2006, showed somewhat elevated levels of CVOCs in classroom 146. At the time of this sampling the building was operating at a negative pressure with respect to outdoors suggesting that soil vapors were being entrained into the classroom through penetrations in the floor slab or building envelope. Between December 27, 2006, and January 4, 2007, EH&E oversaw specific modifications to the building HVAC system and control settings in order to positively pressurize the building (Section 4.1). However, even with the building positively pressurized, indoor air sampling conducted by GEI identified concentrations of CVOCs in the first floor classrooms in the southeastern portion of the Center. EH&E evaluated potential transfer pathways into the Center including plumbing pipe penetrations, floor to slab leakage and slab to foundation leakage, and leakage through unit ventilator building structure interfaces.

4.4.1 Floor Penetrations

Through screening for TVOCs, EH&E determined that VOCs may be entering classroom bathrooms through pipe penetrations at toilet flanges in the bathrooms. The bathrooms

in classrooms 138, 142, and 146 were examined for leakage. In classrooms 142 and 146, the bases of the toilets were removed, the wax seal replaced, and the toilet flanges and bases were caulked subsequent to replacement. In classroom 138, the toilet base could not be removed without damage and therefore only the base was re-caulked. Follow-up screening of TVOCs indicated that sealing of these penetrations significantly reduced the transfer of VOCs into the bathrooms. Note that given the bathrooms are maintained at a negative pressure with respect to the classrooms, the presence of these leaks around the toilet flanges was not likely a significant source of VOCs impacting the classrooms.

4.4.2 Unit Ventilators

EH&E recognized the possibility of VOCs being drawn into the classrooms through the floor penetrations or wall cavities at the unit ventilators. To evaluate this pathway, EH&E investigated unit ventilators serving classrooms 138, 142, and 146 by first conducting field screening for TVOCs under various unit ventilator operating conditions. Additional evaluation was conducted by EH&E through speciated VOC sampling. A description of this testing is presented below.

4.4.2.1 TVOC Screening

To assess the unit ventilator as a potential pathway for VOCs, EH&E conducted field screening for TVOCs under various unit ventilator operating conditions. Measurements were conducted in classrooms 138, 142, and 146. Measurements were conducted in the classrooms to document background levels and at the unit ventilator discharge with the unit ventilators operating normally. A second TVOC screening round was conducted after blocking both the unit ventilator outdoor air intake and the unit ventilator return air inlet in the three classrooms. Blocking of the unit ventilator return and outdoor air intake openings would result in the unit ventilator drawing air from the cabinet, wall section, or floor slab below the unit ventilator.

For the unit ventilator serving classroom 138, TVOCs measured at the unit ventilator discharge were observed to increase after the outdoor and return air inlets were blocked. TVOC levels went from 10 parts per billion (ppb) under “normal” operating conditions to

approximately 60 ppb when the outdoor and room return air were blocked, suggesting this may be a potential pathway for VOCs to enter this space. For the unit ventilator serving classroom 142, TVOCs measured at the unit ventilator discharge did not increase significantly after the outdoor and return air inlets were blocked. For the unit ventilator serving classroom 146, TVOCs measured at the unit ventilator discharge were observed to increase after the outdoor and return air inlets were blocked. TVOC levels went from non detectable levels under “normal” operating conditions to approximately 15 – 20 ppb when the outdoor and room return air was blocked, suggesting this may be a potential pathway for VOCs to enter this space.

4.4.2.2 Speciated VOC Sampling

To further assess the unit ventilators as potential pathway for VOCs, EH&E collected grab samples of air from unit ventilator discharge grills in classrooms 138, 142, and 146. Air samples were collected with unit ventilators operating under normal conditions and again after blocking the unit ventilator outdoor air and return air openings. Results of these samples are presented in Table 4.5.

Table 4.5 Capuano Early Childhood Center Unit Ventilator Air Sampling Screening Results for January 16, 2007		
Classroom	Unit Ventilator Outdoor/Return Air Intake Status	PCE Concentration at Unit Ventilator Discharge ($\mu\text{g}/\text{m}^3$)
138	Unblocked	31.0
138	Blocked	134.0
138	Blocked	140.0
142	Unblocked	23.8
142	Blocked	114.0
146	Unblocked	11.6
146	Blocked	67.9
Outdoor	NA	ND
PCE perchloroethylene $\mu\text{g}/\text{m}^3$ micrograms per cubic meter NA not applicable ND none detected		

Results from Table 4.5 show that, in all three classrooms, the concentration of perchloroethylene in the unit ventilator discharge air increased when the outdoor and room return air openings were blocked. Blocking the outdoor air and return air openings

increased the negative pressure on the wall cavity, which suggested this may be a potential pathway for VOCs to enter this space. Based on the results of this assessment, EH&E provided recommendations regarding removal of specific unit ventilators to facilitate inspection and to implement sealing of penetrations, if required. EH&E's recommendations included removal of the unit ventilator in classroom 138 and follow-up inspection to develop a proposed sealing plan.

On Monday, January 29, 2007, the unit ventilator in classroom 138 was removed from the wall by Honeywell to facilitate inspection. Once the unit ventilator was removed, visual inspection identified a number of potential air transfer pathways. A half inch gap was present between the floor slab and the foundation wall along the entire length of the unit ventilator. Two open electrical conduits were observed to penetrate the floor slab under the unit ventilator. These conduits did not appear on the design drawing and did not appear to serve a function (all unit ventilator electrical cable is supplied through the wall cavity).

Screening for TVOCs showed elevated concentrations of TVOCs (in the 10 – 12 parts per million range [10,000-12,000 ppb]) along the gap between the floor slab and foundation. Elevated TVOC concentrations were also measured when the open conduit was probed (700 – 800 ppb). Results of these measurements suggested the slab/foundation gap as a significant potential pathway for VOCs to enter the space.

Based on the findings of this inspection, EH&E developed a scope of work for sealing that was to be implemented through the assistance of the Somerville DPW Carpentry Department and AB Plastering LLC. This scope of work included sealing of the floor slab/foundation wall gap behind the unit ventilator, sealing of the open conduit at the slab penetration beneath the unit ventilator, and sealing of the wall behind the unit ventilator. Sealing of the penetrations behind unit ventilators serving classrooms 138, 142, and 146 was implemented and completed during the week of January 29, 2007. Sealing of the penetrations behind the unit ventilators serving classrooms 122, 126, and 134 was implemented and completed during the week of February 19, 2007.

To document the effectiveness of the unit ventilator sealing activities and the operation of the sub-slab depressurization system, GEI collected a series of air samples in the first

floor classrooms located on the south side of the Center. These samples were collected on February 23, 2007, with the building air handling equipment operating at their minimum outdoor air setting. Results of air sampling did not indicate any detectable levels of CVOCs in any of the samples collected, indicating that the remedial activities, including operation of the sub-slab depressurization system and sealing of penetrations behind the unit ventilators, were successful in preventing soil gases from entering the building.

Since early January 2007, the building mechanical systems have been operating on a 24 hour per day, seven day per week schedule to ensure a positive building differential pressure. Given the effectiveness of the sub-slab depressurization system and sealing of penetrations behind the unit ventilators, EH&E recommends re-evaluating the need to continue with the current 24 hour operating schedule. This evaluation should be initiated once the Center is vacated for the summer recess.

6.0 REFERENCES

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APPENDIX A

LIMITATIONS

LIMITATIONS

1. Environmental Health & Engineering, Inc.'s (EH&E) indoor air assessment described in the attached report number 14889, *Assessment and Air Monitoring at the Michael E. Capuano Early Childhood Center, 150 Glen Street, Somerville, Massachusetts* (hereafter "the Report"), was performed in accordance with generally accepted practices employed by other consultants undertaking similar studies at the same time and in the same geographical area; and EH&E observed that degree of care and skill generally exercised by such other consultants under similar circumstances and conditions. The observations described in the Report were made under the conditions stated therein. The conclusions presented in the Report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of described services.
2. Observations were made of the site as indicated within the Report. Where access to portions of the site was unavailable or limited, EH&E renders no opinion as to the presence of chemical residues, or to the presence of indirect evidence relating to chemical residues in that portion of the site.
3. The observations and recommendations contained in the Report are based on limited environmental sampling and visual observation, and were arrived at in accordance with generally-accepted standards of industrial hygiene practice. The sampling and observations conducted at the site were limited in scope and, therefore, cannot be considered representative of areas not sampled or observed.
4. When an outside laboratory conducted sample analyses, EH&E relied upon the data provided and did not conduct an independent evaluation of the reliability of these data.
5. The purpose of the Report was to assess the characteristics of the subject site as stated within the Report. No specific attempt was made to verify compliance by any party with all federal, state, or local laws and regulations.

APPENDIX B
MONITORING METHODS

MONITORING METHODS

MONITORING METHODS

Mobile Monitoring for Total Volatile Organic Compounds

EH&E conducted walkthrough surveys for airborne levels of TVOCs at selected areas throughout the building using a ppbRAE VOC Monitor Model PGM-7240. This portable unit is an extremely sensitive photoionization detector (PID) for real-time monitoring of VOCs at parts per billion (ppb) levels using 10.6 electron volt (eV) or 9.8 eV ultraviolet lamp. A diaphragm pump inside the monitor continuously draws air through the PID sensor and then discharges it through a gas outlet port. As organic vapors pass by the lamp, they are photo-ionized and the ejected electrons are detected as a current. A single chip microcomputer measures the sensor readings and calculates the gas concentrations based on calibration to known standard gases.

EH&E used the ppbRae to evaluate TVOC concentrations in the classrooms and other general use areas of the Center. In addition, EH&E used this instrument to evaluate potential transfer pathways through which VOCs could enter the Center.

The instrument was calibrated each day prior to use at the Center. Each day included an evaluation of background conditions at the Center. A tabulated summary of all TVOC readings collected through January 13, 2007 are included in Appendix C. Detailed discussions of these results are provided in Section 4.3 of this report.

Integrated Sampling for Individual Volatile Organic Compounds

Air sampling for individual VOCs were collected in new 5 liter tedlar gas sampling bags (manufactured by SKC, Eighty Four, Pennsylvania) provided by Alpha Woods Hole Labs, Westborough, Massachusetts. Air grab samples were collected using a sampling system that comprised a vacuum pump and a clean evacuated container. For each sample collected, a tedlar bag was placed in the evacuated container and a Teflon sampling tube (attached to the sample bag valve) was run from the bag to the sample location. At the time of sampling, the vacuum pump was started and air from the

evacuated container removed, causing the tedlar bag to expand and fill with air from the sample location. Each sample was performed in one location, taking approximately one minute to fill the sampling bag.

Outdoor air samples were collected with indoor samples for comparison purposes and replicate air samples were collected for QA/QC purposes. Air from the sampling bags was analyzed by Alpha Woods Hole Labs for tetrachloroethene following EPA Method TO-15 utilizing gas chromatography/mass spectrometry (GC/MS).

DIFFERENTIAL PRESSURE MEASUREMENTS

EH&E monitored pressure differential of the Center with respect to outdoors and within the classrooms relative to corridors. Measurement and control of pressure differential within the Center was considered crucial in the evaluation and control of the pathways of contaminants entering the Center.

Two different instruments were utilized to measure and monitor pressure differential. Spot checking of pressure differential relative to outdoors and classroom differential pressures relative to corridors was performed using a TSI Velocicalc Model 8386 and a Modus Model MA2-0011 digital manometer. Long term pressure monitoring of classrooms 145 and 146 was performed with Modus Instruments Model T1003E5B pressure transmitters connected to Onset Computer Model Hobo H8 data loggers.

APPENDIX C

**TOTAL VOLATILE ORGANIC COMPOUND
MEASUREMENTS**

TOTAL VOLATILE ORGANIC COMPOUND MEASUREMENTS

Table C.1 Results of Measurements for Total Volatile Organic Compounds at Capuano Center, Somerville, Massachusetts, December 26, 2006

Time	Location	TVOCs (ppb)*	Comments
10:25	145 Bathroom, Cleanout	84	
	145 Bathroom, Toilet	71	
	145 Classroom, North	4	
	145 Classroom, East	10	
	145 Classroom, South	9	
	145 Classroom, West	5	
10:38	146 Bathroom, Cleanout	55	
	146 Bathroom, Toilet	51	
	146 Classroom, North	37	
	146 Classroom, East	36	
	146 Classroom, South	34	
	146 Classroom, West	38	
10:40	141 Bathroom, Toilet	19	
	141 Classroom, North	8	
	141 Classroom, East	6	
	141 Classroom, South	6	
	141 Classroom, West	6	
10:42	142 Bathroom, Cleanout	28	
	142 Bathroom, Toilet	50	
	142 Classroom, North	15	
	142 Classroom, East	18	
	142 Classroom, South	15	
	142 Classroom, West	16	
10:45	137 Bathroom, Cleanout	23	
	137 Bathroom, Toilet	25	
	137 Classroom, North	10	
	137 Classroom, East	17	
	137 Classroom, South	16	
	137 Classroom, West	14	
10:46	139 Planning Room, North	3	
	139 Planning Room, East	6	
	139 Planning Room, South	6	
	139 Planning Room, West	2	
10:46	131 Women's Room, Center	10	
10:46	127 Men's Room, Center	7	
10:50	138 Bathroom, Cleanout	80	
	138 Bathroom, Toilet	351	
	138 Classroom, North	21	
	138 Classroom, East	21	
	138 Classroom, South	16	
	138 Classroom, West	17	

Table C.1 Continued

Time	Location	TVOCs (ppb)*	Comments
10:53	133 Bathroom, Cleanout	5	
	133 Bathroom, Toilet	5	
	133 Classroom, North	0	
	133 Classroom, East	1	
	133 Classroom, South	1	
	133 Classroom, West	1	
10:58	134 Bathroom, Cleanout	10	
	134 Bathroom, Toilet	14	
	134 Classroom, North	5	
	134 Classroom, East	6	
	134 Classroom, South	7	
	134 Classroom, West	6	
11:06	125 Bathroom, Toilet	11	
	125 Classroom, North	5	
	125 Classroom, East	6	
	125 Classroom, South	5	
	125 Classroom, West	3	
11:09	126 Bathroom, Cleanout	10	
	126 Bathroom, Toilet	6	
	126 Classroom, North	3	
	126 Classroom, East	2	
	126 Classroom, South	8	
	126 Classroom, West	3	
11:04	121 Bathroom, Cleanout	13	
	121 Bathroom, Toilet	14	
	121 Classroom, North	12	
	121 Classroom, East	14	
	121 Classroom, South	13	
	121 Classroom, West	13	
11:15	122 Bathroom, Cleanout	4	
	122 Bathroom, Toilet	6	
	122 Classroom, North	3	
	122 Classroom, East	3	
	122 Classroom, South	1	
	122 Classroom, West	4	
11:17	First Floor Corridor, outside Rm. 146	7	
	First Floor Corridor, outside Rm. 138	4	
	First Floor Corridor, outside Rm. 126	5	
11:18	First Floor Corridor, Cafeteria East entrance	7	
11:18	110 Cafeteria, North	6	
	110 Cafeteria, East	7	
	110 Cafeteria, South	4	
	110 Cafeteria, West	5	
11:25	First Floor Corridor, Cafeteria North entrance	7	

Table C.1 Continued

Time	Location	TVOCs (ppb)*	Comments
11:28	108 Daycare Suite, North	7	
	108 Daycare Suite, East	4	
	108 Daycare Suite, South	4	
	108 Daycare Suite, West	6	
	108 Daycare Bathroom, Toilet	63	
11:30	109 Parents Center, North	1	
	109 Parents Center, South	3	
11:31	107 Women's Room, Cleanout	22	
	107 Women's Room, Sink	23	
11:33	106 Men's Room, Cleanout	36	
	106 Men's Room, Sink	45	
11:37	101 Administration Reception, Center	6	
	101A Administration Work Room, Center	6	
	101C Administration Office, West	8	
	101C Administration Office, East	10	
	101D Administration Bathroom, Toilet	27	
	101E Administration Bathroom, Toilet	29	
	102A Health Suite Cot Room, Center	11	
	102 Health Suite, West	9	
	102 Health Suite, East	7	
	102B Health Suite Bathroom, Cleanout	34	
	101F Administration Office, Center	9	
	101G Administration Conference, North	5	
	101G Administration Conference, South	6	
	101H Administration Office, Center	9	
11:46	First Floor Corridor, Main Entrance Lobby	3	
	104 Gymnasium, North	1	
	104 Gymnasium, East	1	
	104 Gymnasium, South	1	
	104 Gymnasium, West	5	
11:51	113C Bathroom, Cleanout	21	
	113B Bathroom, Toilet	20	
11:53	112 Kitchen, East	8	
	112 Kitchen, West	9	
	Receiving Entrance Corridor, Center	12	
	115 Storage, Center	12	
11:56	116 ATC Office, Center	14	
12:02	117 Fire Pump Room, Cleanout	42	
	117 Fire Pump Room, Conduit penetration	51	
	117 Fire Pump Room, Floor drain	40	

Table C.1 Continued

Time	Location	TVOCs (ppb)*	Comments
12:09	Main Water Room, Pipe penetration	89	
	Main Water Room, Floor drain	108	Note small gasoline containers are stored in this room
	Main Water Room, Floor penetration	136	
	Main Water Room, Center	94	
12:24	112A Fuel Oil Room, Center	4	
	104A Storage, Center	4	
	104B Storage, Center	3	
	104C Bathroom, Cleanout	3	
	104C Bathroom, Floor drain	2	
	104C Bathroom, Shower drain	4	
12:29	104D Office, Center	1	
TVOC total volatile organic compound ppb parts per billion * Concentrations provided as isobutylene equivalent.			

Table C.2 Results of Measurements for Total Volatile Organic Compounds at Capuano Center, Somerville, Massachusetts, January 1, 2007

Time	Location	TVOCs (ppb)*	Comments
12:38	101 Administration Reception	18	
12:38	101A Administration Workroom	17	
12:38	101A Administration Workroom, Cleanout	18	
12:40	101C Administration Office	25	
12:39	101E Administration Bathroom	24	
12:39	101E Administration Bathroom, Toilet	33	
12:39	101D Administration Bathroom	27	
12:40	101D Administration Bathroom, Toilet	35	
12:41	Outdoor, Front entrance	17	
12:41	104 Gymnasium	15	
12:42	104C Gymnasium Shower	8	
12:42	104C Gymnasium Shower, Cleanout	13	
12:42	104C Gymnasium Shower, Floor drain	17	
12:43	104C Gymnasium Shower, Shower drain	26	
12:45	107 Women's Room	34	
12:45	107 Women's Room, Floor drain	42	
12:46	108 Daycare	19	
12:47	108 Daycare, Cleanout	20	
12:47	108A Bathroom	25	
12:47	108A Bathroom, Toilet	30	
12:48	109 Parent Center	15	

Table C.2 Continued

Time	Location	TVOCs (ppb)*	Comments
12:48	109 Parent Center, Cleanout	17	
12:49	110 Cafeteria	19	
12:49	111 Electric and Fire Control	19	
12:49	111 Electric and Fire Control, Conduit penetrations	21	
12:50	112 Kitchen	21	
12:50	112 Kitchen, cleanout	24	
12:50	112 Kitchen, floor drain	30	
12:52	Corridor outside Room 122	22	
12:52	Corridor outside Room 122, cleanout	26	
13:25	121 Classroom	12	
13:26	121 Classroom, Sink	20	Many cleaning supplies present
13:26	121A Bathroom	20	
13:26	121A Bathroom, Toilet	23	
12:52	122 Classroom	17	
12:52	122 Classroom, Sink	226	Many cleaning supplies present
12:53	122A Bathroom	24	
12:53	122A Bathroom, Toilet	29	
13:25	123 Workroom	18	
12:54	124 Workroom	26	
13:23	125 Classroom	16	
13:24	125 Classroom, Sink	160	Many cleaning supplies present
13:24	125A Bathroom	19	
13:24	125A Bathroom, Toilet	24	
12:54	126 Classroom	14	
12:54	126 Classroom, Sink	52	Many cleaning supplies present
12:55	126A Bathroom	24	
12:55	126A Bathroom, Toilet	83	Note sewer gas type odor from under toilet
13:23	127 Men's Room	27	
13:22	129 Custodian	23	
13:23	129 Custodian, Mop/sink drain	73	
13:22	131 Women's Room	21	
12:56	Corridor outside Room 134	21	
13:20	133 Classroom	14	
13:20	133 Classroom, Sink	26	Many cleaning supplies present
13:21	133A Bathroom	16	
13:21	133A Bathroom, Toilet	51	
12:57	134 Classroom	16	
12:57	134A Bathroom	23	
12:57	134A Bathroom, Toilet	121	
12:58	136 Workroom	29	
13:18	137 Classroom	10	

Table C.2 Continued

Time	Location	TVOCs (ppb)*	Comments
13:18	137 Classroom, Sink	14	No cleaning supplies are present
13:19	137A Bathroom	14	
13:19	137A Bathroom, Toilet	22	
12:59	138 Classroom	19	
12:59	138A Bathroom	82	
12:59	138A Bathroom, Toilet	1,321	Can feel air movement from flange
13:17	139 Teacher Planning	17	
13:00	Corridor outside Room142	19	
13:15	141 Classroom	11	
13:16	141 Classroom, Sink	399	Many cleaning supplies present
13:16	141A Bathroom	43	
13:16	141A Bathroom, Toilet	79	Note sewer gas type odor
13:01	142 Classroom	34	
13:02	142A Bathroom	44	
13:02	142A Bathroom, Toilet	500	Note sewer gas type odor
13:03	142 Classroom, Sink	250	Many cleaning supplies present
13:15	143 Workroom	24	
13:03	144 Workroom	20	
13:10	145A Bathroom	60	
13:11	145A Bathroom, Toilet	100	Toilet ring leaks water
13:15	145 Classroom, Sink	25	
13:10	145 Classroom	17	
13:03	146 Classroom	25	
13:04	146 Classroom, Sink	150	Many cleaning supplies present
13:04	146A Bathroom	50	
13:05	146A Bathroom, Toilet	80	
13:05	Outdoor, East	20	
13:30	222 Classroom	16	
13:30	222 Classroom, Sink	22	Many art supplies present
13:30	222A Bathroom	15	
13:30	222A Bathroom, Toilet	15	
13:22	224 Workroom	16	
13:32	226 Classroom	15	
13:37	226 Classroom, Sink	37	Many art supplies present
13:37	226A Bathroom	22	
13:38	226A Bathroom, Toilet	23	
13:58	227 Men's Room	22	
13:57	229 Custodian	17	
13:57	229 Custodian, Mop Drain	40	
13:57	231 Women's Room	23	
13:55	233 Classroom	24	
13:55	233 Classroom, Sink	27	No cleaning or art supplies present
13:55	233A Bathroom	20	

Table C.2 Continued

Time	Location	TVOCs (ppb)*	Comments
13:55	233A Bathroom, Toilet	21	
13:40	234 Classroom	15	
13:40	234 Classroom, Sink	13	
13:40	234A Bathroom	14	
13:40	234A Bathroom, Toilet	18	Note strong sewer gas odor
13:41	236 Storage	15	
13:53	237 Classroom	22	
13:54	237 Classroom, Sink	32	Many art supplies present
13:54	237A Bathroom	19	
13:54	237A Bathroom, Toilet	123	
13:42	238 Classroom	12	
13:42	238 Classroom, Sink	38	Many cleaning supplies present
13:42	238A Bathroom	13	
13:42	238A Bathroom, Toilet	52	
13:53	239 Teacher Planning	18	
13:44	240 Storage	23	
13:51	241 Classroom	17	
13:52	241 Classroom, Sink	37	Many art supplies present
13:52	241A Bathroom	18	
13:52	241A Bathroom, Toilet	27	
13:45	242 Classroom	11	
13:45	242 Classroom, Sink	24	Many cleaning supplies present
13:45	242A Bathroom	20	
13:45	242A Bathroom, Toilet	23	
13:51	243 Workroom	19	
13:46	244 Workroom	12	
13:48	245 Classroom	21	
13:49	245 Classroom, Sink	170	Many cleaning supplies present
13:49	245A Bathroom	30	
13:50	245A Bathroom, Toilet	265	
13:46	246 Classroom	23	
13:47	246 Classroom, Sink	61	Many art supplies present
13:47	246A Bathroom	27	
13:47	246A Bathroom, Toilet	48	

TVOC total volatile organic compound
ppb parts per billion

* Concentrations provided as isobutylene equivalent.

Table C.3 Results of Measurements for Total Volatile Organic Compounds at Capuano Center, Somerville, Massachusetts, January 2, 2007

Time	Location	TVOCs (ppb)*	Comments
12:02	Outdoor, Front	0	
12:03	Corridor outside Room 101	14	
12:05	104 Gymnasium	0	
12:08	109 Parents Center	6	
12:07	Corridor outside Room 110	22	
12:10	Stairs to outdoors at loading dock	29	
12:11	Corridor outside Room 126	43	
12:11	124 Workroom	66	
12:12	126 Classroom	22	
12:13	Corridor outside 138	43	
12:13	136 Workroom	44	
12:14	138 Classroom	6	
12:15	138 Classroom, Sink	29	
12:16	138A Bathroom	84	
12:16	138A Bathroom, Toilet	1,568	
12:18	138 Unit ventilator discharge air	8	
12:19	Corridor outside Room 142	76	
12:25	142 Classroom	22	
12:27	142A Bathroom	59	
12:28	142A Bathroom, Toilet	65	
12:26	142 Classroom, Sink	246	
12:28	142 Unit ventilator discharge air	17	
12:29	144 Workroom	70	
12:30	146 Classroom	21	
12:31	146 Classroom, Sink	28	
12:32	146A Bathroom	45	
12:33	146A Bathroom, Toilet	120	

TVOC total volatile organic compound
ppb parts per billion

* Concentrations provided as isobutylene equivalent.

Table C.4 Results of Measurements for Total Volatile Organic Compounds at Capuano Center, Somerville, Massachusetts, January 4, 2007

Time	Location	TVOCs (ppb)*	Comments
10:17	Corridor outside Room 101	68	
10:16	106 Men's Room	84	Sewer gas odor
10:13	107 Women's Room	71	Sewer gas odor
10:12	109 Parents Center	37	
10:08	110 Cafeteria	60	
10:10	Outdoor, North	10	
10:06	Corridor outside Room 126	62	
10:04	123 Workroom	82	
10:05	124 Workroom	53	
10:02	127 Men's Room	74	
10:00	131 Women's Room	72	
09:59	Corridor outside Room 138	61	
09:57	136 Workroom	63	
09:51	138 Classroom	47	Bleach odor
09:53	138A Bathroom	50	
09:54	138A Bathroom, Toilet	92	Recently caulked toilet
09:47	Corridor outside Room 146	70	Artwork drying
09:39	142 Classroom	52	
09:40	142A Bathroom	67	Sewer gas odor
09:41	142A Bathroom, Toilet	179	Recently caulked toilet
09:48	143 Workroom	42	
09:37	144 Workroom	31	
09:32	146 Classroom	33	
09:33	146A Bathroom	46	
09:35	146A Bathroom, Toilet	61	Recently caulked toilet
09:45	Outdoor, East	18	

TVOC total volatile organic compound
ppb parts per billion

* Concentrations provided as isobutylene equivalent.

Table C.5 Results of Measurements for Total Volatile Organic Compounds at Capuano Center, Somerville, Massachusetts, January 5, 2007

Time	Location	TVOCs (ppb)*	Comments
10:58	Corridor outside Room 101	31	
10:59	104 Gymnasium	2	
11:10	Corridor outside Room 104	21	
11:10	106 Men's Room	55	Sewer gas odor
11:13	107 Women's Room	45	Sewer gas odor
11:09	108 Day Care	19	
11:00	109 Parents Center	14	
10:57	110 Cafeteria	18	
10:58	Corridor outside Room 110	18	
10:56	Corridor outside Room 126	20	
10:55	127 Men's Room	31	
10:54	131 Women's Room	30	
10:49	Corridor outside Room 138	16	
10:50	138 Classroom	15	
10:51	138A Bathroom	24	
10:52	138A Bathroom, Toilet	57	
10:39	Corridor outside 146	12	
10:44	142 Classroom	12	
10:45	142A Bathroom	28	
10:47	142A Bathroom, Toilet	70	
10:43	144 Workroom	1	
10:40	146 Classroom	5	
10:41	146A Bathroom	16	
10:42	146A Bathroom, Toilet	33	
10:37	Outdoor, East	2	

TVOC total volatile organic compound
ppb parts per billion

* Concentrations provided as isobutylene equivalent.

Table C.6 Results of Measurements for Total Volatile Organic Compounds at Capuano Center, Somerville, Massachusetts, January 6, 2007

Time	Location	TVOCs (ppb)*	Comments
09:14	101 Administration Reception	0	
09:14	101A Administration Workroom	0	
09:15	101B Assistant Principal Office	0	
09:16	101C Principal Office	2	
09:16	101D Administration Bathroom	34	
09:20	101F Guidance	0	
09:21	101G Conference	0	
09:20	101H Guidance	0	
09:17	102 Health Suite	0	
09:18	102A Cot Room	0	
09:18	102B Bathroom	10	
09:19	102C Closet	0	
09:07	104 Gymnasium	0	
09:24	106 Men's Room	25	
09:24	107 Women's Room	13	
09:26	108 Day Care	0	
09:27	109 Parents Center	0	
08:52	111 Electric and Fire Control	0	
08:53	112 Kitchen	0	
08:53	113A Custodian	0	
08:53	Corridor 113, near exterior door	11	
08:54	Corridor 113, Center	25	Some chemicals
08:58	115 Storage	53	Cleaning solution storage
08:57	116 ATC Office	231	Recently used hand sanitizer and spray
08:45	121 Classroom	0	
08:47	122 Classroom	0	
08:45	123 Workroom	0	
08:47	124 Workroom	0	
08:43	125 Classroom	0	
08:44	125 Classroom, Sink	175	Several stored chemicals
08:44	125A Bathroom, Toilet	0	
08:48	126 Classroom	0	
08:48	126 Classroom, Sink	10	
08:49	126A Bathroom, Toilet	8	
08:42	127 Men's Room	0	
08:39	133 Classroom	0	
08:41	134 Classroom	0	
08:39	137 Classroom	0	
08:38	139 Teacher Planning	0	
08:30	141 Classroom	0	
08:29	143 Workshop	0	
08:29	144 Workshop	0	
08:28	145 Classroom	0	
08:28	145 Classroom, Sink	7	
08:28	145 Classroom, Toilet	5	
08:26	146 Classroom	0	

Table C.6 Continued

Time	Location	TVOCs (ppb)*	Comments
08:27	146 Classroom, Sink	4	
08:27	146A Bathroom, Toilet	10	
08:27	146A Bathroom, Cleanout	6	
08:50	Stair 2	0	
08:52	110 Cafeteria	0	
09:06	Corridor outside Room 110	2	
09:13	Lobby corridor	0	
08:24	Classroom corridor center	0	
08:24	Classroom corridor exterior end	0	
08:33	Outdoors, East	0	
08:49	FD valve box in corridor	0	
<p>TVOC total volatile organic compound ppb parts per billion</p> <p>* Concentrations provided as isobutylene equivalent.</p>			

Table C.7 Results of Measurements for Total Volatile Organic Compounds at Capuano Center, Somerville, Massachusetts, January 11, 2007

Time	Location	TVOCs (ppb)*	Comments
10:10	138 Classroom	0	Room background
10:12	138 Classroom, Unit ventilator discharge air	3	At supply discharge opening, unit ventilator operating normally
10:30	138 Classroom, Unit ventilator discharge air	5	At supply discharge opening, unit ventilator operating normally
10:54	138 Classroom, Unit ventilator discharge air	19	At supply discharge opening, Unit ventilator return blocked
10:55	138 Classroom, Unit ventilator discharge air	25	At supply discharge opening, Unit ventilator return blocked
10:56	138 Classroom, Unit ventilator discharge air	85	At supply discharge opening, Unit ventilator outdoor air and return air inlets blocked
10:57	Outdoors	0	
10:58	146 Classroom	3	Room background
10:59	146 Classroom, Unit ventilator discharge air	1	At supply discharge opening, unit ventilator operating normally
11:00	146A Bathroom	5	
11:01	146A Bathroom, Toilet	15	
11:02	142 Classroom	10	
11:03	142 Classroom, Unit ventilator discharge air	1	At supply discharge opening, unit ventilator operating normally
11:04	142A Bathroom	13	

Table C.7 Continued

Time	Location	TVOCs (ppb)*	Comments
11:04	142A Bathroom, Toilet	25	
11:05	138 Classroom	30	Room background
11:06	138 Classroom, Unit ventilator discharge air	87	Unit ventilator return and outdoor intake blocked
11:07	Duct tape	550	Duct tape used to block return air opening, Reference sample to determine duct tape as TVOC source
11:23	138 Classroom, Unit ventilator discharge air	15	At supply discharge opening, unit ventilator operating normally
Noted that the duct tape used to seal the unit ventilator return air inlet in classroom 138 is a source of VOCs and may impact test results. The duct tape was removed and the return air inlet blocked with polyethylene sheeting using no duct tape.			
11:25	138 Classroom, Unit ventilator discharge air	70	Unit ventilator return and outdoor intake blocked
11:28	138 Classroom, Unit ventilator discharge air	71	Unit ventilator return and outdoor intake blocked
11:29	138 Classroom	55	Unit ventilator return and outdoor intake blocked
11:30	138 Classroom	59	Unit ventilator return and outdoor intake blocked
11:31	138 Classroom, Unit ventilator discharge air	74	Unit ventilator return and outdoor intake blocked
11:33	138 Classroom, Unit ventilator discharge air	72	Unit ventilator return and outdoor intake blocked
11:34	138 Classroom, Unit ventilator discharge air	74	Unit ventilator return and outdoor intake blocked
11:37	138 Classroom, Unit ventilator discharge air	71	Unit ventilator return and outdoor intake blocked
11:38	138 Classroom	62	Unit ventilator return and outdoor intake blocked
11:40	138 Classroom	65	Unit ventilator return and outdoor intake blocked
11:42	138 Classroom, Unit ventilator discharge air	72	Unit ventilator return and outdoor intake blocked
11:44	142 Classroom	11	
11:45	142 Classroom, Unit ventilator discharge air	5	
11:55	142 Classroom, Unit ventilator discharge air	12	Unit ventilator return and outdoor intake blocked
11:57	142 Classroom, Unit ventilator discharge air	16	Unit ventilator return and outdoor intake blocked
12:00	142 Classroom, Unit ventilator discharge air	5	Unit ventilator return and outdoor intake blocked
12:03	138 Classroom, Unit ventilator discharge air	6	
12:06	138 Classroom	16	
12:08	138 Classroom, Unit ventilator discharge air	59	Unit ventilator return and outdoor intake blocked

Table C.7 Continued

Time	Location	TVOCs (ppb)*	Comments
12:10	138 Classroom, Unit ventilator discharge air	60	Unit ventilator return and outdoor intake blocked
12:12	138 Classroom, Unit ventilator discharge air	62	Unit ventilator return and outdoor intake blocked
12:15	138 Classroom	31	Unit ventilator return and outdoor intake blocked
12:15	138 Classroom, Unit ventilator discharge air	54	Unit ventilator return and outdoor intake blocked
12:18	Hallway floor joint near Stair 3 S	40	Crack on floor tile
12:25	Weep hole under intake #138	0	
12:29	146 Classroom	0	
12:30	146 Classroom, Unit ventilator discharge air	0	
12:32	Corridor outside Room 146	20	
12:35	146 Classroom, Unit ventilator discharge air	5	Unit ventilator return and outdoor intake blocked
12:37	146 Classroom, Unit ventilator discharge air	12	Unit ventilator return and outdoor intake blocked
12:41	146 Classroom	0	Unit ventilator return and outdoor intake blocked
12:42	146 Classroom, Unit ventilator discharge air	9 – 15	Unit ventilator return and outdoor intake blocked
12:43	146 Classroom, Unit ventilator discharge air	15 – 17	Unit ventilator return and outdoor intake blocked
12:45	138 Classroom	12	Room background
12:46	138 Classroom, Unit ventilator discharge air	0	
12:47	138 Classroom, Unit ventilator discharge air	47	Unit ventilator return and outdoor intake blocked
12:49	138 Classroom, Unit ventilator discharge air	51	Unit ventilator return and outdoor intake blocked

TVOC total volatile organic compound
ppb parts per billion

* Concentrations provided as isobutylene equivalent.

Table C.8 Results of Measurements for Total Volatile Organic Compounds at Capuano Center, Somerville, Massachusetts, January 13, 2007

Time	Location	TVOCs (ppb)*	Comments
09:45	Outdoors, South	15	
09:47	126 Classroom	4	
09:48	126 Classroom, Unit ventilator discharge air	0 – 6	
09:50	134 Classroom	1	
09:51	134 Classroom, Unit ventilator discharge air	1	
09:52	138 Classroom	1	
09:53	138 Classroom, Unit ventilator discharge air	1	
09:54	142 Classroom	2	
09:55	142 Classroom, Unit ventilator discharge air	2	
09:56	146 Classroom	0	
09:57	146 Classroom, Unit ventilator discharge air	0	
09:58	Outdoor, East	0	
10:00	Outdoor, At kitchen/dumpster	0	
10:13	126 Classroom	17 – 19	
10:14	126 Classroom, Unit ventilator discharge air	13 – 15	
10:16	134 Classroom	12 – 15	
10:17	134 Classroom, Unit ventilator discharge air	10 – 15	
10:19	138 Classroom	17 – 20	
10:20	138 Classroom, Unit ventilator discharge air	15 – 18	
10:22	142 Classroom	16 – 22	
10:23	142 Classroom, Unit ventilator discharge air	14 – 19	
10:24	146 Classroom	13 – 15	
10:26	146 Classroom, Unit ventilator discharge air	9 – 12	
10:28	Outdoor, South	80 – 120	Note truck idling
10:30	Outdoor, South	9 – 15	
10:36	Outdoor, South by dumpster	10 – 15	
10:37	Outdoor, South in dumpster	25 – 30	
11:40	122 Classroom	13 – 18	
11:41	122 Classroom, Unit ventilator discharge air	12 – 18	
11:43	126 Classroom	10 – 15	
11:45	126 Classroom, Unit ventilator discharge air	10 – 15	
11:52	134 Classroom	14 – 16	
11:53	134 Classroom, Unit ventilator discharge air	10 – 14	
12:10	138 Classroom	13 – 17	

Table C.8 Continued

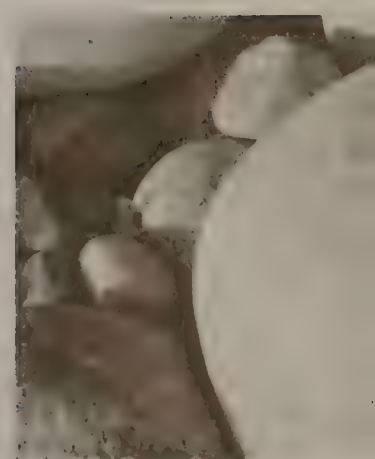
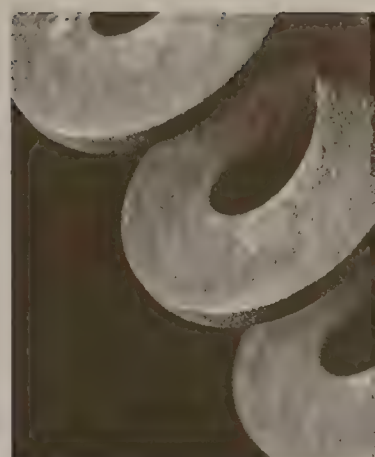
Time	Location	TVOCs (ppb)*	Comments
12:11	138 Classroom, Unit ventilator discharge air	14 – 20	
12:13	142 Classroom	17 – 22	
12:14	142 Classroom, Unit ventilator discharge air	16 – 22	
12:15	146 Classroom	11 – 17	
12:16	146 Classroom, Unit ventilator discharge air	10 – 15	
12:19	Outdoors, East	10 – 15	
12:21	145 Classroom	10 – 15	
12:22	145 Classroom, Unit ventilator discharge air	12 – 17	
12:23	141 Classroom	13 – 16	
12:24	141 Classroom, Unit ventilator discharge air	12 – 16	
12:24	137 Classroom	17 – 21	
12:25	137 Classroom, Unit ventilator discharge air	21 – 25	
12:26	137 Classroom	25 – 31	
12:34	133 Classroom	11 – 16	
12:35	133 Classroom, Unit ventilator discharge air	11 – 15	
12:36	137 Classroom	19 – 22	
12:37	137 Classroom, Unit ventilator discharge air	22 – 25	
12:39	125 Classroom	13 – 19	
12:40	125 Classroom, Unit ventilator discharge air	15 – 17	
12:42	121 Classroom	15 – 18	
12:43	121 Classroom, Unit ventilator discharge air	13 – 16	
12:46	Outside, South	20 – 22	
12:53	122A Bathroom	23 – 27	
12:59	138A Bathroom	26	
13:00	138A Bathroom, Floor	25 – 40	Crack in floor
13:05	138 Classroom, Unit ventilator discharge air	21 – 24	

TVOC total volatile organic compound
ppb parts per billion

* Concentrations provided as isobutylene equivalent



Geotechnical
Environmental and
Water Resources
Engineering



Appendix F

Air Sampling Checklists, Surveys and Sample Location Photographs

Residences



Indoor Air Sampling Checklist

Sampling Location:
11-13 Tufts Street

Sample ID: **04516-11-13 Tufts Street-B**

Date:	9/28/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M159	Sampling Start Time:	10:55:00 AM
Flow Regulator ID:	MC072	Sampling Finish Time:	2:43:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	74.9	73.2
Barometric Pressure (in WC):	30.03	30.02
Prevailing Wind Direction:	W	W
General Weather Conditions:	sunny	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	71.4	72.3
Barometric Pressure (in WC):	30.02	30.02

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Plugged in new air purifier following sampling, picture taken.**

Air intake at: **3.5' above floor**



Indoor Air Sampling Checklist

Sampling Location:
11-13 Tufts Street

Sample ID: **04516-11-13 Tufts Street-1**

Date:	9/28/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M125	Sampling Start Time:	10:52:00 AM
Flow Regulator ID:	MC070	Sampling Finish Time:	2:42:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	74.3	73.2
Barometric Pressure (in WC):	30.03	30.02
Prevailing Wind Direction:	W	W
General Weather Conditions:	sunny	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	73.4	74.1
Barometric Pressure (in WC):	30.01	30.01

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.3' above floor**



Indoor Air Sampling Checklist

Sampling Location:
27 Tufts Street

Sample ID: **04516-27 Tufts Street-B**

Date:	9/28/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M014	Sampling Start Time:	10:43:00 AM
Flow Regulator ID:	MC071	Sampling Finish Time:	2:33:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	74.3	73.2
Barometric Pressure (in WC):	30.03	30.02
Prevailing Wind Direction:	W	W
General Weather Conditions:	sunny	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	72.1	72.7
Barometric Pressure (in WC):	30.02	30.02

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Plugged in new air purifier following sampling, picture taken.**

Air intake at: **4.5 above floor**



Indoor Air Sampling Checklist

Sampling Location:
27 Tufts Street

Sample ID: **04516-27 Tufts Street-1**

Date:	9/28/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M086	Sampling Start Time:	10:38:00 AM
Flow Regulator ID:	MC032	Sampling Finish Time:	2:31:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **2 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	74.3	73.2
Barometric Pressure (in WC):	30.03	30.02
Prevailing Wind Direction:	W	W
General Weather Conditions:	sunny	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	73.9	74.1
Barometric Pressure (in WC):	30.03	30.02

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4' above floor**



Outdoor Air Sampling Checklist

Sampling Location:
Tufts Street

Sample ID: **04516-Tufts Street-O-1A**

Date:	9/28/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M072	Sampling Start Time:	11:02:00 AM
Flow Regulator ID:	MFC47	Sampling Finish Time:	2:48:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	74.5	73.2
Barometric Pressure (in WC):	30.01	30.02
Prevailing Wind Direction:	W	W
General Weather Conditions:	sunny	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	74.5	73.2
Barometric Pressure (in WC):	30.01	30.02

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: Tree Day 1**

Air intake at: **4.7' above ground**



Outdoor Air Sampling Checklist

Sampling Location:
Tufts Street

Sample ID: **04516-Tufts Street-O-2A**

Date:	9/28/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M135	Sampling Start Time:	11:09:00 AM
Flow Regulator ID:	MFC25	Sampling Finish Time:	3:14:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	74.5	73.2
Barometric Pressure (in WC):	30.01	30.02
Prevailing Wind Direction:	W	W
General Weather Conditions:	sunny	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):		
Barometric Pressure (in WC):		

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: Fence, Day 1**

Air intake at: **4.6' above ground**

Residential Air Sampling 9-28-06



045162-11-13Tufts-1



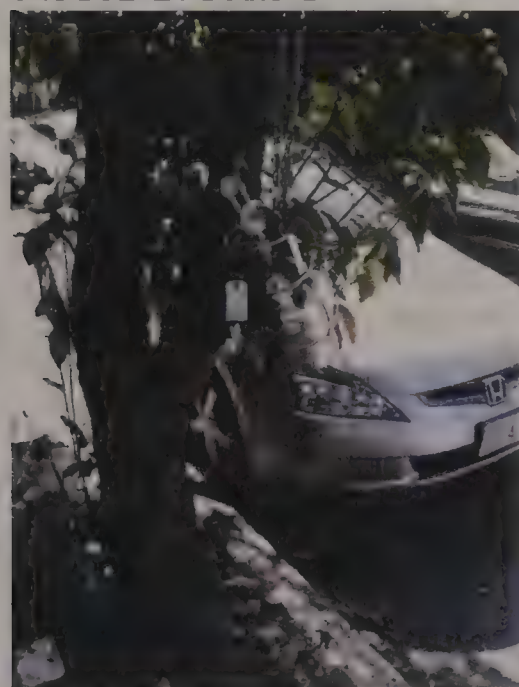
045162-11-13Tufts-B



045162-27Tufts-1



045162-27Tufts-B



045162-Tufts-O-1A



045162-Tufts-O-2A



Indoor Air Sampling Checklist

Sampling Location:
9 Tufts Street

Sample ID: **04516-9 Tufts Street-BR**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M151	Sampling Start Time:	11:06:00 AM
Flow Regulator ID:	MC045	Sampling Finish Time:	3:15:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **6* in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	30.01
Prevailing Wind Direction:	SE	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	68.2	68.4
Barometric Pressure (in WC):	30.08	30.08

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: ***Sampling ended before can pressure reached appropriate level. Home owner was not available to stay later to allow for more sampling time.**

Air intake at: **3.8' above floor**



Indoor Air Sampling Checklist

Sampling Location:
9 Tufts Street

Sample ID: 04516-9 Tufts Street-1R

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M152	Sampling Start Time:	11:00:00 AM
Flow Regulator ID:	MC018	Sampling Finish Time:	3:08:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **6* in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	SE	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69.9	70.3
Barometric Pressure (in WC):	30.09	30.08

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 female tenant**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Sampling ended before can pressure reached appropriate level due to access restraints. Home owner was unable to stay later to allow for more sampling time.**

Air intake at: **3.9' above floor**



Indoor Air Sampling Checklist

Sampling Location:
9 Tufts Street

Sample ID: 04516-9 Tufts Street-1L

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M073	Sampling Start Time:	11:02:00 AM
Flow Regulator ID:	MC003	Sampling Finish Time:	3:10:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	SE	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69.8	70.3
Barometric Pressure (in WC):	30.09	30.09

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.5' above floor**



Indoor Air Sampling Checklist

Sampling Location:
17 Tufts Street

Sample ID: **04516-17 Tufts Street-B**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M048	Sampling Start Time:	9:04:00 AM
Flow Regulator ID:	MC063	Sampling Finish Time:	12:46:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	54	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	none	SE
General Weather Conditions:	Cloudy	Cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	73.7	73.9
Barometric Pressure (in WC):	30.10	30.10

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.7' above floor**



Indoor Air Sampling Checklist

Sampling Location:
17 Tufts Street

Sample ID: **04516-17 Tufts Street-C**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M157	Sampling Start Time:	9:05:00 AM
Flow Regulator ID:	MC066	Sampling Finish Time:	12:45:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **0.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	54	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	None	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	73.7	73.9
Barometric Pressure (in WC):	30.10	30.09

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.7' above floor**



Indoor Air Sampling Checklist

Sampling Location:
17 Tufts Street

Sample ID: **04516-17 Tufts Street-1**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M004	Sampling Start Time:	9:01:00 AM
Flow Regulator ID:	MFC94	Sampling Finish Time:	12:47:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	54	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	None	SE
General Weather Conditions:	Cloudy	Cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	67.1	68.2
Barometric Pressure (in WC):	30.09	30.08

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.0' above floor**



Indoor Air Sampling Checklist

Sampling Location:
23 Tufts Street

Sample ID: **04516-23 Tufts Street-B**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M156	Sampling Start Time:	9:28:00 AM
Flow Regulator ID:	MFC030	Sampling Finish Time:	1:21:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	54	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	none	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	73.0	73.2
Barometric Pressure (in WC):	30.08	30.08

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **2 twin beds in basement**

Air intake at: **3.8' above floor**



Indoor Air Sampling Checklist

Sampling Location:
23 Tufts Street

Sample ID: **04516-23 Tufts Street-1**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M114	Sampling Start Time:	1:27:00 PM
Flow Regulator ID:	MC019	Sampling Finish Time:	5:35:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **6* in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	61
Barometric Pressure (in WC):	29.99	30.00
Prevailing Wind Direction:	SE	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	72.1	71.8
Barometric Pressure (in WC):	30.08	30.09

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **No** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Sampling ended before the can pressure reached the appropriate level due to access restraints. The home owner was unable to stay later to allow for more sampling time.**

Air intake at: **4.4' above floor**



Indoor Air Sampling Checklist

Sampling Location:
25 Tufts Street

Sample ID: **04516-25 Tufts Street-B**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M068	Sampling Start Time:	9:18:00 AM
Flow Regulator ID:	MC038	Sampling Finish Time:	1:00:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30.5 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	54	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	NA	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	70.7	70.7
Barometric Pressure (in WC):	30.10	30.09

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.2' above floor**



Indoor Air Sampling Checklist

Sampling Location:
25 Tufts Street

Sample ID: **04516-25 Tufts Street-1**

Date: **10/2/2006** Sample Type: **Summa**
Sampling personnel: **K. Wolfe** Analysis Method: **TO15**
Summa Canister ID: **M007** Sampling Start Time: **9:16:00 AM**
Flow Regulator ID: **MC073** Sampling Finish Time: **1:01:00 PM**

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	54	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	NA	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	68.9	69.1
Barometric Pressure (in WC):	30.09	30.09

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Plugged in new air purifier following sampling, picture taken.**

Air intake at: **4.5' above floor**



Outdoor Air Sampling Checklist

Sampling Location:
Tufts Street

Sample ID: **04516-Tufts Street-O-1B**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M142	Sampling Start Time:	8:44:00 AM
Flow Regulator ID:	MC053	Sampling Finish Time:	12:40:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	53.6	64
Barometric Pressure (in WC):	30.08	29.99
Prevailing Wind Direction:	NA	SE
General Weather Conditions:	30.08	29.99

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):		
Barometric Pressure (in WC):		

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: tree, day 2. Weather station here-0842 start (weather station time) 1513 end.**

Air intake at: **4.6' above ground**



Outdoor Air Sampling Checklist

Sampling Location:
Tufts Street

Sample ID: **04516-Tufts Street-O-2B**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M067	Sampling Start Time:	8:39:00 AM
Flow Regulator ID:	MFC010	Sampling Finish Time:	1:30:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	53.6	64
Barometric Pressure (in WC):	30.08	29.99
Prevailing Wind Direction:	none	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	53.6	64
Barometric Pressure (in WC):	30.08	29.99

PID readings at sample location (ppm)

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: Fence Day 2**

Air intake at: **4.6' above ground**



Outdoor Air Sampling Checklist

Sampling Location:
Tufts Street

Sample ID: **04516-Tufts Street-O-3A**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M062	Sampling Start Time:	10:30:00 AM
Flow Regulator ID:	MFC034	Sampling Finish Time:	2:23:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	SE	SE
General Weather Conditions:	Cloudy	Cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	29.99

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: in fence on Cross Street. Photos taken at 10:30.**

Air intake at: **4.2' above ground**



Outdoor Air Sampling Checklist

Sampling Location:

Tufts Street

Sample ID: **04516-Tufts Street-O-4A**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M031	Sampling Start Time:	10:36:00 AM
Flow Regulator ID:	MC066	Sampling Finish Time:	2:19:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **28in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	SE	SE
General Weather Conditions:	Cloudy	Cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	29.99

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: in fence on Alston Street. Photos taken at 10:36.**

Air intake at: **4.0' above ground**



Outdoor Air Sampling Checklist

Sampling Location:
Tufts Street

Sample ID: 04516-Tufts Street-O-5A

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M078	Sampling Start Time:	10:43:00 AM
Flow Regulator ID:	MC074	Sampling Finish Time:	2:29:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	SE	SE
General Weather Conditions:	Cloudy	Cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	29.99

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: in fence on corner of Hadley Court and Franklin Street.**
Photos taken at: 10:43

Air intake at: **4.4' above ground**



Outdoor Air Sampling Checklist

Sampling Location:

Tufts Street

Sample ID: **04516-Tufts Street-O-6A**

Date:	10/2/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M136	Sampling Start Time:	10:47:00 AM
Flow Regulator ID:	MFC035	Sampling Finish Time:	2:50:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	29.99
Prevailing Wind Direction:	SE	SE
General Weather Conditions:	Cloudy	Cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	64	64
Barometric Pressure (in WC):	30.01	29.99

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: in fence on Knowlton Street. Photos take at: 10:47.**

Air intake at: **4.5' above ground**

Residential Air Sampling 10-2-06



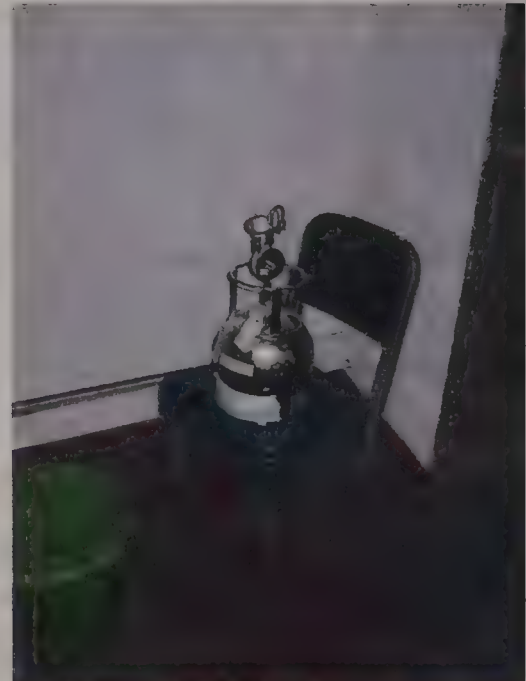
045162-9Tufts-1R



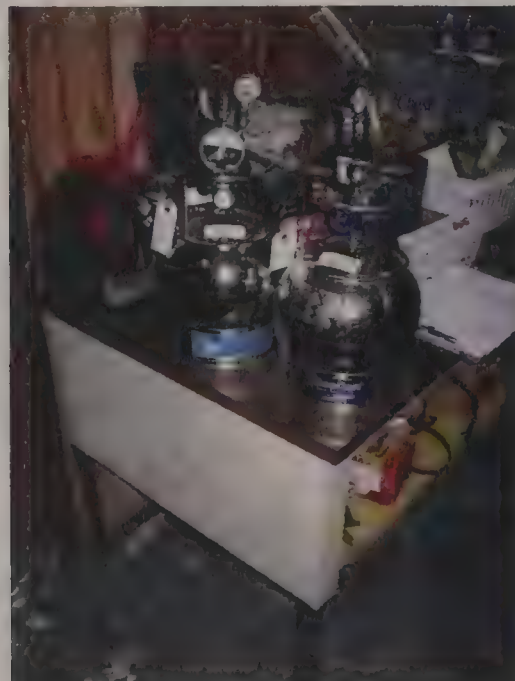
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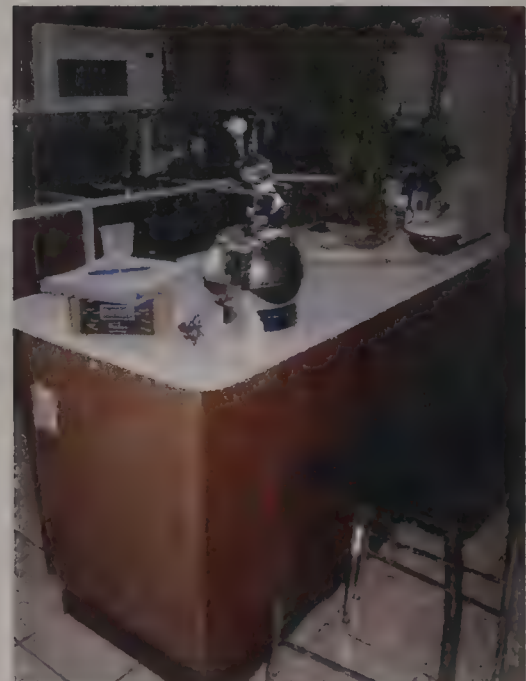
045162-9Tufts-BR



045162-17Tufts-1



045162-17Tufts-B&C



045162-23Tufts-1



045162-23Tufts-B



045162-25Tufts-1



045162-25Tufts-B



045162-Tufts-O-1B



045162-Tufts-O-2B



045162-Tufts-O-3A



045162-Tufts-O-4A



045162-Tufts-O-5A

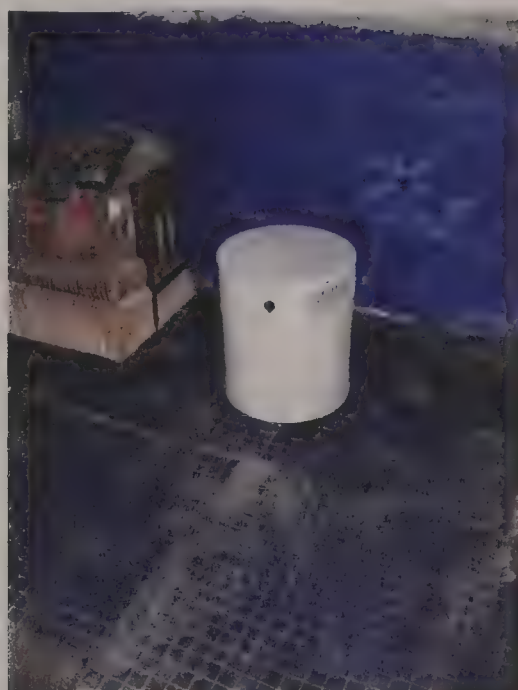


045162-Tufts-O-6A

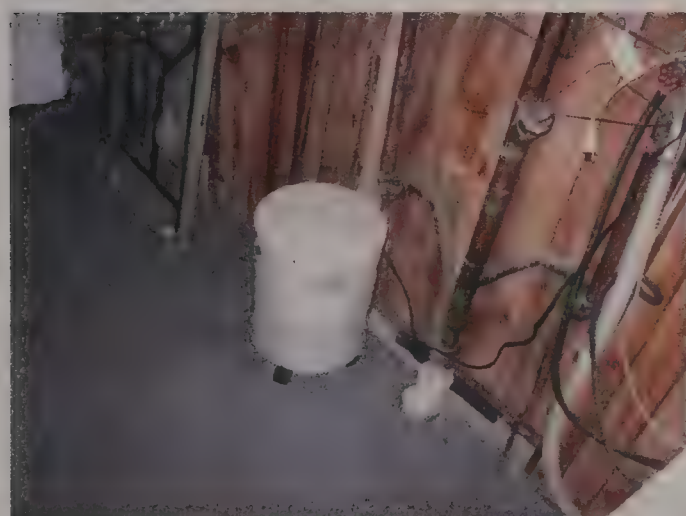
Air Purifiers (Installed on Sample Date)



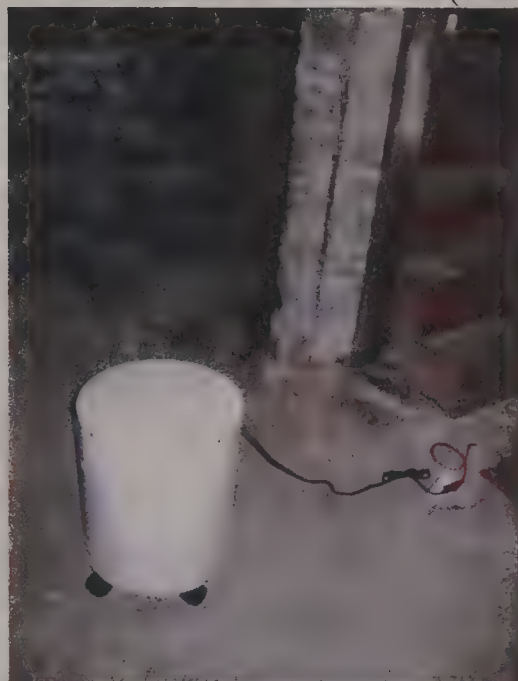
9 Tufts Street Basement (10/2/2006)



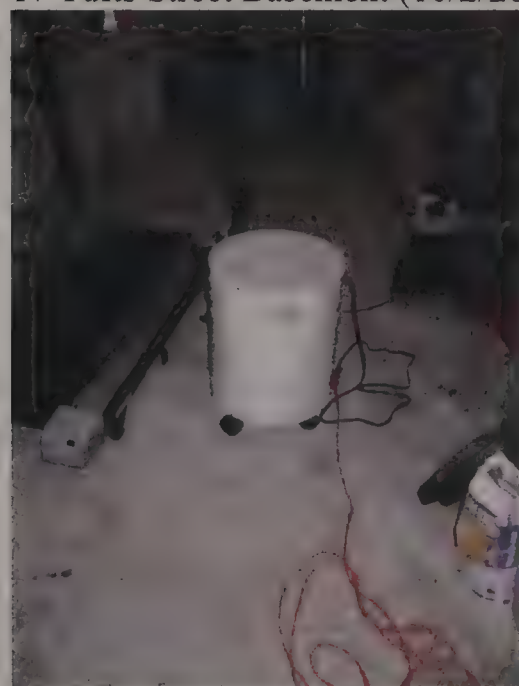
11-13 Tufts Street Basement (9/28/2006)



17 Tufts Street Basement (10/2/2006)



25 Tufts Street Basement (10/2/2006)



27 Tufts Street Basement (9/28/2006)



Indoor Air Sampling Checklist

Sampling Location:
19 Tufts Street

Sample ID: **04516-19 Tufts Street-B**

Date:	10/10/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M089	Sampling Start Time:	10:56:00 AM
Flow Regulator ID:	MC067	Sampling Finish Time:	3:00:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **32 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **20 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69	68
Barometric Pressure (in WC):	30.11	30.10
Prevailing Wind Direction:	NA	NA
General Weather Conditions:	Sunny	Cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	68	67
Barometric Pressure (in WC):	30.09	30.09

PID readings at sample location (ppm)

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **@15:00, call n pressure os at o 20 inHg. Called Accutest and they said to send sample along and they'd try to test it. Jerry mentioned that this past weekend he had cleared the basement.**

Air intake at: **3.5' above floor**



Indoor Air Sampling Checklist

Sampling Location:
19 Tufts Street

Sample ID: 04516-19 Tufts Street-C

Date:	10/10/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M111	Sampling Start Time:	10:57:00 AM
Flow Regulator ID:	MFC013	Sampling Finish Time:	3:02:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **8* in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69	68
Barometric Pressure (in WC):	30.11	30.10
Prevailing Wind Direction:	NA	NA
General Weather Conditions:	Sunny	Cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	68	67
Barometric Pressure (in WC):	30.09	30.09

PID readings at sample location (ppm)

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Sampling ended before the can pressure reached an appropriate level. Home owner was unable to stay to allow for more sampling time.**

Air intake at: **3.5' above floor**



Indoor Air Sampling Checklist

Sampling Location:
19 Tufts Street

Sample ID: **04516-19 Tufts Street-1**

Date:	10/10/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M074	Sampling Start Time:	10:53:00 AM
Flow Regulator ID:	MFC009	Sampling Finish Time:	2:51:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **28.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69	68
Barometric Pressure (in WC):	30.11	30.10
Prevailing Wind Direction:	NA	NA
General Weather Conditions:	Sunny	Cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69	68
Barometric Pressure (in WC):	30.10	30.09

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.0' above floor**

Residential Air Sampling 10-10-06



045162-19Tufts-1



045162-19Tufts-B&C



Indoor Air Sampling Checklist

Sampling Location:
9 Tufts Street

Sample ID: **04516-9 Tufts Street-BR**

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M100	Sampling Start Time:	11:12:00 AM
Flow Regulator ID:	MFC48	Sampling Finish Time:	3:19:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **6 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	51	54
Barometric Pressure (in WC):	29.81	29.71
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	67	66
Barometric Pressure (in WC):	29.91	29.92

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.5' above floor**



Indoor Air Sampling Checklist

Sampling Location:
9 Tufts Street

Sample ID: **04516-9 Tufts Street-1R**

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M009	Sampling Start Time:	11:05:00 AM
Flow Regulator ID:	MFC017	Sampling Finish Time:	3:15:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	51	54
Barometric Pressure (in WC):	29.81	29.71
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	71	72
Barometric Pressure (in WC):	29.86	29.84

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 baby boy, 2 adult women**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.6' above floor**



Indoor Air Sampling Checklist

Sampling Location:
9 Tufts Street

Sample ID: **04516-9 Tufts Street-1L**

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M019	Sampling Start Time:	11:08:00 AM
Flow Regulator ID:	MC012	Sampling Finish Time:	3:12:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **6* in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	51	54
Barometric Pressure (in WC):	29.81	29.71
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	72	72
Barometric Pressure (in WC):	29.87	29.86

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 male**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Sampling ended before can pressure reached the appropriate level due to access restraints. Home owner was not able to stay to allow more sampling time.**

Air intake at: **4.2' above floor**



Indoor Air Sampling Checklist

Sampling Location:
11-13 Tufts Street

Sample ID: 04516-11-13 Tufts Street-B

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M126	Sampling Start Time:	9:03:00 AM
Flow Regulator ID:	MC073	Sampling Finish Time:	12:57:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	49	53
Barometric Pressure (in WC):	29.95	29.75
Prevailing Wind Direction:	SE	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	66.4	66.6
Barometric Pressure (in WC):	29.93	29.90

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.6' above floor**



Indoor Air Sampling Checklist

Sampling Location:
11-13 Tufts Street

Sample ID: **04516-11-13 Tufts Street-1**

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M115	Sampling Start Time:	8:59:00 AM
Flow Regulator ID:	MFC010	Sampling Finish Time:	12:55:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **2 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	49	53
Barometric Pressure (in WC):	29.85	29.75
Prevailing Wind Direction:	SE	SE
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	66.8	67.0
Barometric Pressure (in WC):	29.90	29.91

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 male**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.4' above floor**



Indoor Air Sampling Checklist

Sampling Location:
19 Tufts Street

Sample ID: **04516-19 Tufts Street-B**

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M067	Sampling Start Time:	10:50:00 AM
Flow Regulator ID:	MC070	Sampling Finish Time:	2:47:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30** in/hr

Pressure gauge reading (After sample collected): Flow Controller: **3** in/hr

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	50	54
Barometric Pressure (in WC):	29.81	29.71
Prevailing Wind Direction:	SE	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	66	67
Barometric Pressure (in WC):	29.98	29.97

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.2' above floor**



Indoor Air Sampling Checklist

Sampling Location:
19 Tufts Street

Sample ID: **04516-19 Tufts Street-C**

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	MC006	Sampling Start Time:	10:51:00 AM
Flow Regulator ID:	MFC009	Sampling Finish Time:	2:48:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **28in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **19 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	50	54
Barometric Pressure (in WC):	29.81	29.71
Prevailing Wind Direction:	SE	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	66	67
Barometric Pressure (in WC):	29.98	29.97

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.2' above floor**



Indoor Air Sampling Checklist

Sampling Location:
19 Tufts Street

Sample ID: **04516-19 Tufts Street-1**

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M153	Sampling Start Time:	10:48:00 AM
Flow Regulator ID:	MFC036	Sampling Finish Time:	2:45:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **1 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	50	54
Barometric Pressure (in WC):	29.81	29.71
Prevailing Wind Direction:	SE	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	70	70
Barometric Pressure (in WC):	29.97	29.96

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **elderly woman**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.8' above floor**



Indoor Air Sampling Checklist

Sampling Location:
25 Tufts Street

Sample ID: **04516-25 Tufts Street-B**

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M124	Sampling Start Time:	11:28:00 AM
Flow Regulator ID:	MC059	Sampling Finish Time:	3:27:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **28.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **2 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	51	54
Barometric Pressure (in WC):	29.81	29.72
Prevailing Wind Direction:	SE	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	68	68
Barometric Pressure (in WC):	29.93	29.95

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Air purifier was unplugged upon arrival. There are no outlets in the basement and the tenant did not want an extension cord running upstairs.**

Air intake at: **3.5' above floor**



Indoor Air Sampling Checklist

Sampling Location:
25 Tufts Street

Sample ID: **04516-25 Tufts Street-1**

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M130	Sampling Start Time:	11:26:00 AM
Flow Regulator ID:	M071	Sampling Finish Time:	3:25:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **2 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	51	54
Barometric Pressure (in WC):	29.81	29.72
Prevailing Wind Direction:	SE	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69	68
Barometric Pressure (in WC):	29.91	29.90

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 female**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.8' above floor**



Outdoor Air Sampling Checklist

Sampling Location:
Tufts Street

Sample ID: **04516-Tufts Street-O-1A**

Date: **12/15/2006**

Sample Type: **Summa**

Sampling personnel: **K. Wolfe**

Analysis Method: **TO15**

Summa Canister ID: **M101**

Sampling Start Time: **8:39:00 AM**

Flow Regulator ID: **MFC041**

Sampling Finish Time: **12:10:00 PM**

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29.5 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature (°F):

50

52

Barometric Pressure (in WC):

29.85

29.78

Prevailing Wind Direction:

none

SE

General Weather Conditions:

cloudy

cloudy

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature (°F):

50

52

Barometric Pressure (in WC):

29.85

29.78

PID readings at sample location (ppm)

0

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: Tree, Day 1**

Air intake at: **4.7' above ground**



Outdoor Air Sampling Checklist

Sampling Location:
Tufts Street

Sample ID: **04516-Tufts Street-O-2A**

Date:	12/15/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M040	Sampling Start Time:	8:48:00 AM
Flow Regulator ID:	MC072	Sampling Finish Time:	12:49:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **32in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	50	53
Barometric Pressure (in WC):	29.85	29.76
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	50	53
Barometric Pressure (in WC):	29.85	29.76

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

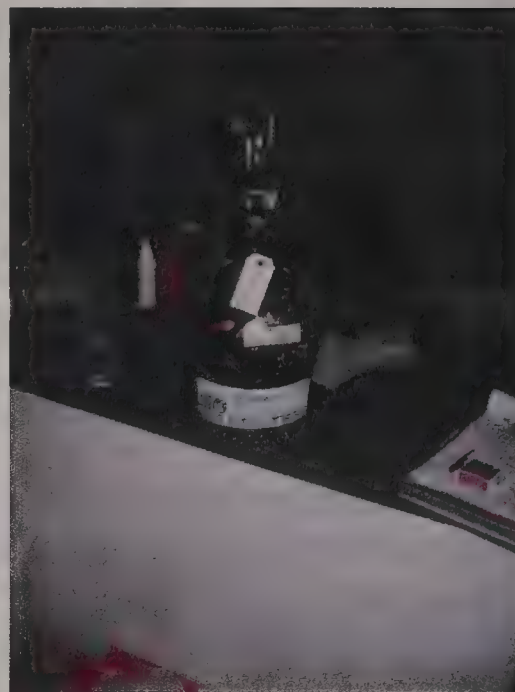
Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: Fence, Day 1**

Air intake at: **4.8' above ground**

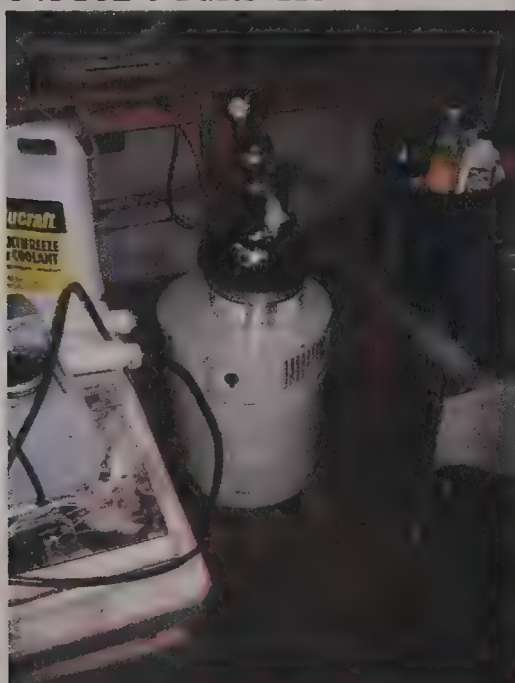
Residential Air Sampling 12-15-06



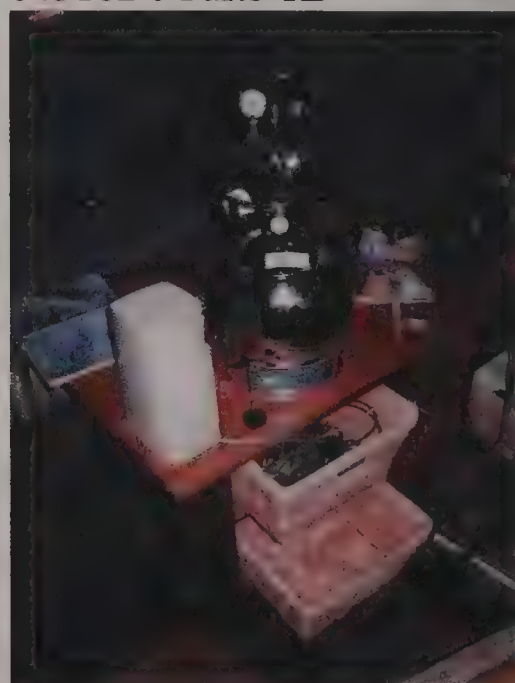
045162-9Tufts-1R



045162-9Tufts-1L



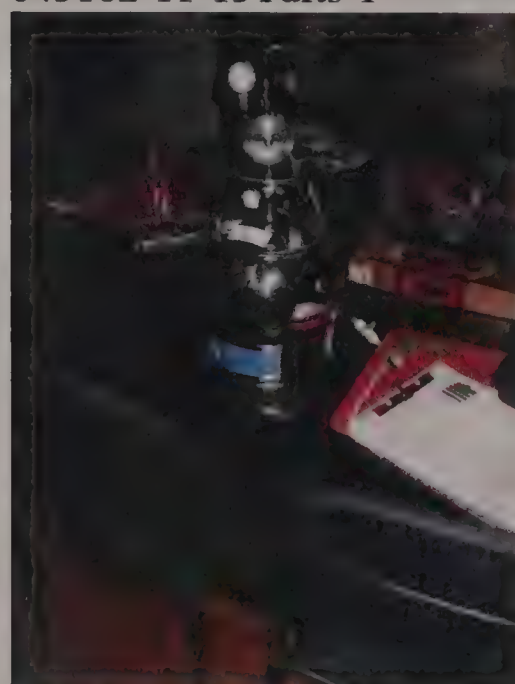
045162-9Tufts-BR



045162-11-13Tufts-1



045162-11-13Tufts-B



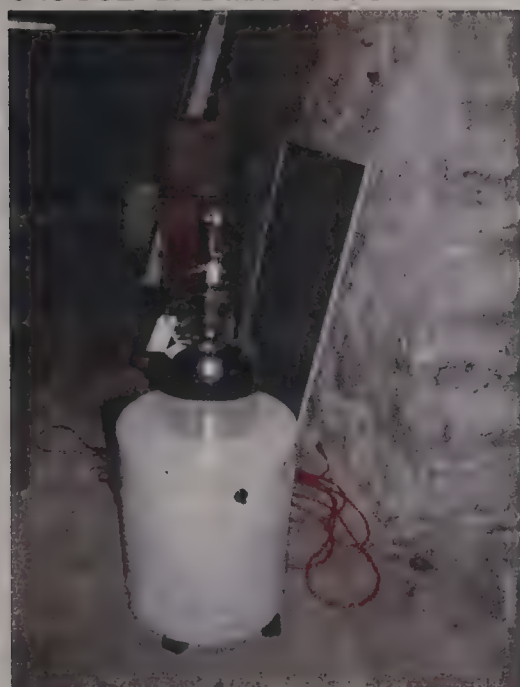
045162-19Tufts-1



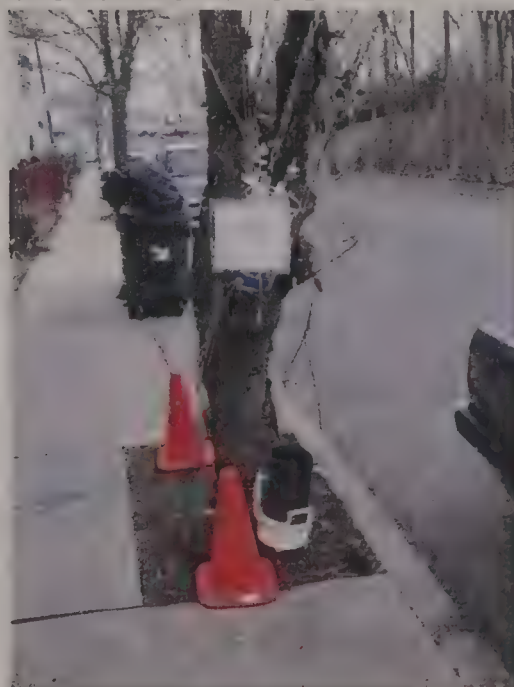
045162-19Tufts-B&C



045162-25Tufts-1



045162-25Tufts-B



045162-Tufts-O-1A



045162-Tufts-O-2A



Indoor Air Sampling Checklist

Sampling Location:
17 Tufts Street

Sample ID: **04516-17 Tufts Street-B**

Date:	12/18/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M092	Sampling Start Time:	9:02:00 AM
Flow Regulator ID:	MFC25	Sampling Finish Time:	12:57:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	52	52
Barometric Pressure (in WC):	30.05	30.1
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69	68
Barometric Pressure (in WC):	30.02	30.01

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.2' above floor**



Indoor Air Sampling Checklist

Sampling Location:
17 Tufts Street

Sample ID: **04516-17 Tufts Street-C**

Date:	12/18/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M005	Sampling Start Time:	9:03:00 AM
Flow Regulator ID:	MC061	Sampling Finish Time:	12:58:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **0.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	52	52
Barometric Pressure (in WC):	30.05	30.01
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69	68
Barometric Pressure (in WC):	30.02	30.01

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.2' above floor**



Indoor Air Sampling Checklist

Sampling Location:
17 Tufts Street

Sample ID: 04516-17 Tufts Street-1

Date:	12/18/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M095	Sampling Start Time:	9:07:00 AM
Flow Regulator ID:	MC054	Sampling Finish Time:	1:01:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	52	52
Barometric Pressure (in WC):	30.05	30.01
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	70	70
Barometric Pressure (in WC):	30.01	30.00

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.2' above floor**



Indoor Air Sampling Checklist

Sampling Location:
23 Tufts Street

Sample ID: **04516-23 Tufts Street-B**

Date:	12/18/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M103	Sampling Start Time:	3:55:00 PM
Flow Regulator ID:	MC035	Sampling Finish Time:	7:49:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	50	48
Barometric Pressure (in WC):	30.00	30.01
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	dark/cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	74	75
Barometric Pressure (in WC):	30.03	30.05

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.1' above floor**



Indoor Air Sampling Checklist

Sampling Location:
23 Tufts Street

Sample ID: **04516-23 Tufts Street-1**

Date:	12/18/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M134	Sampling Start Time:	3:53:00 PM
Flow Regulator ID:	MC013	Sampling Finish Time:	7:47:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	50	48
Barometric Pressure (in WC):	30.00	30.01
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	dark/cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	70	69
Barometric Pressure (in WC):	30.01	30.03

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 child boy, 1 adult woman**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.9' above floor**



Indoor Air Sampling Checklist

Sampling Location:
27 Tufts Street

Sample ID: **04516-27 Tufts Street-B**

Date:	12/18/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M105	Sampling Start Time:	9:59:00 AM
Flow Regulator ID:	MFC014	Sampling Finish Time:	1:53:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	53	52
Barometric Pressure (in WC):	30.06	30.00
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	66	67
Barometric Pressure (in WC):	30.07	30.04

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Mr. Papa pointed out liquid seeping up through the basement floor. I took some pictures to show to M. Ensign and I. Gladstone.**

Air intake at: **4.2' above floor**



Indoor Air Sampling Checklist

Sampling Location:
27 Tufts Street

Sample ID: **04516-27 Tufts Street-1**

Date:	12/18/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M145	Sampling Start Time:	9:57:00 AM
Flow Regulator ID:	MFC008	Sampling Finish Time:	1:51:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	53	52
Barometric Pressure (in WC):	30.06	30.00
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	68	68
Barometric Pressure (in WC):	30.00	30.01

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Painted poly on the walls around 1200**

Air intake at: **5.0' above floor**



Outdoor Air Sampling Checklist

Sampling Location:

Tufts Street

Sample ID: **04516-Tufts Street-O-1B**

Date:	12/18/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M127	Sampling Start Time:	8:32:00 AM
Flow Regulator ID:	MFC40	Sampling Finish Time:	12:18:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	52	52
Barometric Pressure (in WC):	30.06	30.01
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	52	52
Barometric Pressure (in WC):	30.06	30.01

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: Tree, Day 2**

Air intake at: **4.7' above ground**



Outdoor Air Sampling Checklist

Sampling Location:
Tufts Street

Sample ID: **04516-Tufts Street-O-2B**

Date:	12/18/2006	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M022	Sampling Start Time:	8:36:00 AM
Flow Regulator ID:	MC027	Sampling Finish Time:	12:23:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	52	52
Barometric Pressure (in WC):	30.06	30.01
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	52	52
Barometric Pressure (in WC):	30.06	30.01

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

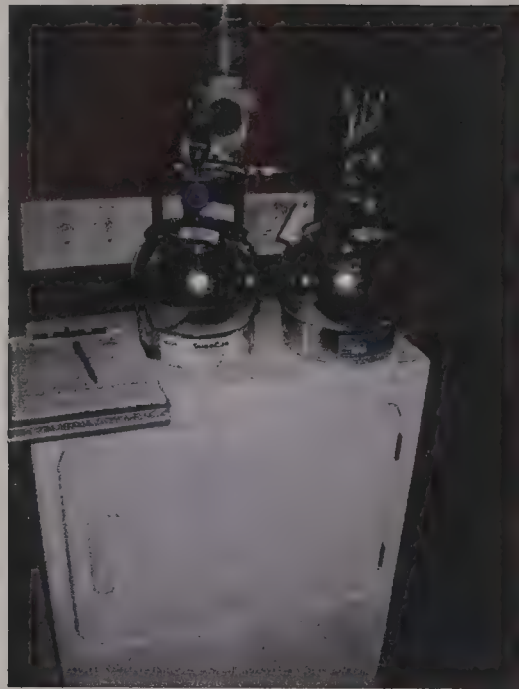
Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Location: Fence, Day 2**

Air intake at: **4.8' above ground**

Residential Air Sampling 12-18-06



045162-17Tufts-1



045162-17Tufts-B&C



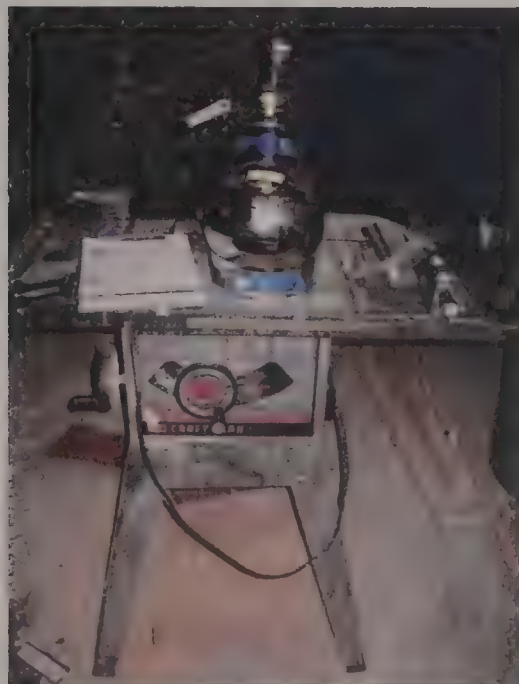
045162-23Tufts-1



045162-23Tufts-B



045162-27Tufts-1



045162-27Tufts-B



045162-Tufts-O-1B



045162-Tufts-O-2B

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Indoor Air



Survey Completed by: **K. Wolfe**

Date: **1/22/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **9 Dell Street**

Property Contact: **George Halley (Owner)**

Contact's Phone: Home: **(617) 625-3174**

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **0**

PART II – BUILDING CHARACTERISTICS

Building Type: **Single-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Concrete**

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **609ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete Dirt Broken areas**

Foundation Materials: **Poured Concrete**

Integrity: **Concrete with Cracks /earthen**

Foundation Integrity: **Many cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|--|-------------------------------------|---|---|
| <input type="checkbox"/> Basement sump
present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in
sump? | <input type="checkbox"/> Product in sump? |
|--|-------------------------------------|---|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input checked="" type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- | | | | |
|--|--|--|--|
| <input checked="" type="checkbox"/> Central Air Conditioning | <input type="checkbox"/> Individual Air Conditioning Units | <input type="checkbox"/> Bathroom Ventilation Fans | <input type="checkbox"/> Mechanical Fans |
| <input type="checkbox"/> Kitchen Range Hood Fan | <input type="checkbox"/> Other: | | |

Type of fuel utilized:

- | | | | |
|---|-----------------------------------|-----------------------------------|---|
| <input checked="" type="checkbox"/> Natural Gas | <input type="checkbox"/> Electric | <input type="checkbox"/> Fuel Oil | <input type="checkbox"/> Wood |
| <input type="checkbox"/> Coal | <input type="checkbox"/> Solar | <input type="checkbox"/> Kerosene | <input type="checkbox"/> Outside (Fresh) Air Intake |

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- | | | |
|-------------------------------------|--|---|
| <input type="checkbox"/> Insulation | <input type="checkbox"/> Storm Windows | <input type="checkbox"/> Energy Efficient Windows |
| <input type="checkbox"/> Other: | | |

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	1 bottle of dish soap (1st floor)	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **0.0 ppm in all screened areas**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS



Indoor Air Sampling Checklist

Sampling Location:
9 Dell Street

Sample ID: **04516-9 Dell Street-9-Dell-B**

Date:	1/22/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M041	Sampling Start Time:	11:58:00 AM
Flow Regulator ID:	MC073	Sampling Finish Time:	3:40:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	24	23
Barometric Pressure (in WC):	30.61	30.62
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	66	65
Barometric Pressure (in WC):	30.60	30.63

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.3' above floor**



Indoor Air Sampling Checklist

Sampling Location:

9 Dell Street

Sample ID: **04516-9 Dell Street-9-Dell-C**

Date: **1/22/2007**

Sample Type: **Summa**

Sampling personnel: **K. Wolfe**

Analysis Method: **TO15**

Summa Canister ID: **M164**

Sampling Start Time: **11:59:00 AM**

Flow Regulator ID: **MC091**

Sampling Finish Time: **3:41:00 PM**

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	24	23
Barometric Pressure (in WC):	30.61	30.62
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	66	65
Barometric Pressure (in WC):	30.60	30.63

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.3' above floor**



Indoor Air Sampling Checklist

Sampling Location:

9 Dell Street

Sample ID: **04516-9 Dell Street-9-Dell-1**

Date:	1/22/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M056	Sampling Start Time:	12:02:00 PM
Flow Regulator ID:	MFC046	Sampling Finish Time:	3:42:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **28** in/hr

Pressure gauge reading (After sample collected): Flow Controller: **3** in/hr

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	24	23
Barometric Pressure (in WC):	30.61	30.62
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	59	70
Barometric Pressure (in WC):	30.59	30.61

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 adult male & femal**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.5' above floor**

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Indoor Air



Survey Completed by: **K. Wolfe**

Date: **1/22/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **10 Dell Street**

Property Contact: **Jorge Silva (Owner)**

Contact's Phone: Home: **(617) 625-6570**

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **1**

PART II – BUILDING CHARACTERISTICS

Building Type: **Single-family Residential**

Describe Building: **2 floors with attic & basement**

Type of Ground Cover Around Outside of Building: **grass concrete mulch**

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **528ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **Poured Concrete**

Integrity: **Concrete; Good Integrity**

Foundation Integrity: **No cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input checked="" type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Indoor Air



Type of ventilation system:

- | | | | |
|---|--|--|--|
| <input type="checkbox"/> Central Air Conditioning | <input type="checkbox"/> Individual Air Conditioning Units | <input type="checkbox"/> Bathroom Ventilation Fans | <input type="checkbox"/> Mechanical Fans |
| <input type="checkbox"/> Kitchen Range Hood Fan | <input type="checkbox"/> Other: | | |

Type of fuel utilized:

- | | | | |
|---|-----------------------------------|-----------------------------------|---|
| <input checked="" type="checkbox"/> Natural Gas | <input type="checkbox"/> Electric | <input type="checkbox"/> Fuel Oil | <input type="checkbox"/> Wood |
| <input type="checkbox"/> Coal | <input type="checkbox"/> Solar | <input type="checkbox"/> Kerosene | <input type="checkbox"/> Outside (Fresh) Air Intake |

Septic system?

Irrigation/private well?

Existing subsurface depressurization (radon) system in place?

Has the building been weatherized with any of the following:

- | | | |
|-------------------------------------|--|---|
| <input type="checkbox"/> Insulation | <input type="checkbox"/> Storm Windows | <input type="checkbox"/> Energy Efficient Windows |
| <input type="checkbox"/> Other: | | |

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input checked="" type="checkbox"/> Cleaning solvents	3 laundry in basement	<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Yes**

Results of screening / comments: **0.0 ppm**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building? **4 months ago**

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS



Indoor Air Sampling Checklist

Sampling Location:
10 Dell Street

Sample ID: **04516-10 Dell Street-B**

Date:	1/22/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M093	Sampling Start Time:	9:58:00 AM
Flow Regulator ID:	MC059	Sampling Finish Time:	1:46:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: in/hr

Pressure gauge reading (After sample collected): Flow Controller: **3** in/hr

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	23	25
Barometric Pressure (in WC):	30.60	30.61
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69	69
Barometric Pressure (in WC):	30.61	30.362

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.9 above floor**



Indoor Air Sampling Checklist

Sampling Location:
10 Dell Street

Sample ID: **04516-10 Dell Street-1**

Date: **1/22/2007**

Sample Type: **Summa**

Sampling personnel: **K. Wolfe**

Analysis Method: **TO15**

Summa Canister ID: **M098**

Sampling Start Time: **10:00:00 AM**

Flow Regulator ID: **M0043**

Sampling Finish Time: **1:47:00 PM**

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29.5 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **0.5 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature (°F):

23

25

Barometric Pressure (in WC):

30.60

30.61

Prevailing Wind Direction:

none

none

General Weather Conditions:

cloudy

cloudy

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature (°F):

70

70

Barometric Pressure (in WC):

30.61

30.61

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 adult male**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.8 above floor**

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Indoor Air



Survey Completed by: **K. Wolfe**

Date: **1/22/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **14 Dell Street**

Property Contact: **Kevin Griffin (Owner)**

Contact's Phone: Home: **(617) 623-1684**

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **1**

PART II – BUILDING CHARACTERISTICS

Building Type: **Single-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **grass and concrete**

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **0ft²**

Foundation Type: **Partial Basement (crawl space)**

Basement Floor: **Concrete**

Foundation Materials: **Poured Concrete**

Integrity: **Concrete; Good Integrity**

Foundation Integrity: **No cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input checked="" type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☐ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☐ Natural Gas
 ☐ Electric
 ☒ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system?

Irrigation/private well?

Existing subsurface depressurization (radon) system in place?

Has the building been weatherized with any of the following:

- ☐ Insulation
 ☐ Storm Windows
 ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	1 can finish, 1 can paint in basement	<input type="checkbox"/>
<input checked="" type="checkbox"/> Cleaning solvents	3 containers of laundry detergent in basement	<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input checked="" type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **0.0 ppm in all screened locations**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☒ Describe (with location): **outside by retaining wall**

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS



Indoor Air Sampling Checklist

Sampling Location:

14 Dell Street

Sample ID: **04516-14 Dell Street-B**

Date: **1/22/2007**

Sample Type: **Summa**

Sampling personnel: **K. Wolfe**

Analysis Method: **TO15**

Summa Canister ID: **M100**

Sampling Start Time: **9:01:00 AM**

Flow Regulator ID: **MC013**

Sampling Finish Time: **12:47:00 PM**

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31.5 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature (°F):

23

25

Barometric Pressure (in WC):

30.60

30.61

Prevailing Wind Direction:

none

none

General Weather Conditions:

cloudy

cloudy

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature (°F):

68

68

Barometric Pressure (in WC):

30.62

30.61

PID readings at sample location (ppm)

0

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.7' above floor**



Indoor Air Sampling Checklist

Sampling Location:
14 Dell Street

Sample ID: **04516-14 Dell Street-1**

Date: **1/22/2007**

Sample Type: **Summa**

Sampling personnel: **K. Wolfe**

Analysis Method: **TO15**

Summa Canister ID: **M020**

Sampling Start Time: **9:04:00 AM**

Flow Regulator ID: **M0069**

Sampling Finish Time: **12:49:00 PM**

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature (°F):

23

25

Barometric Pressure (in WC):

30.60

30.61

Prevailing Wind Direction:

none

none

General Weather Conditions:

cloudy

cloudy

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature (°F):

70

68

Barometric Pressure (in WC):

30.58

30.61

PID readings at sample location (ppm)

0

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 adult male, 1 toddler**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.8' above floor**

No Pre-Sampling Survey Available for 16 Dell Street



Indoor Air Sampling Checklist

Sampling Location:

16 Dell Street

Sample ID: **04516-16 Dell Street-16-Dell-B**

Date: **1/22/2007**

Sample Type: **Summa**

Sampling personnel: **K. Wolfe**

Analysis Method: **TO15**

Summa Canister ID: **M030**

Sampling Start Time: **5:59:00 PM**

Flow Regulator ID: **MC049**

Sampling Finish Time: **9:29:00 PM**

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **6 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature (°F):

22

20

Barometric Pressure (in WC):

30.60

30.58

Prevailing Wind Direction:

none

none

General Weather Conditions:

cloudy/flurry

cloudy/flurry

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature (°F):

61

65

Barometric Pressure (in WC):

30.61

30.60

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **Yes** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

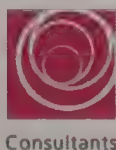
Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.5' above floor**

GEI



Consultants

Indoor Air Sampling Checklist

Sampling Location:

16 Dell StreetSample ID: **04516-16 Dell Street-16-Dell-1**

Date:	1/22/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M149	Sampling Start Time:	6:02:00 PM
Flow Regulator ID:	MC090	Sampling Finish Time:	9:30:00 PM

Did Summa Canister go to ambient pressure? **No**Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**Pressure gauge reading (After sample collected): Flow Controller: **6 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	22	20
Barometric Pressure (in WC):	30.60	30.58
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy/flurry	cloudy/flurry

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	71	71
Barometric Pressure (in WC):	30.61	30.60

PID readings at sample location (ppm) **0**Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**Was the building aired out prior to sample collection? **No** If yes, how long?Windows open? **No** Ventilation fans? **No**Was there significant precipitation within 12 hours of (or during) the sampling event? **No**Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 adult female**Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.9' above floor**

No Pre-Sampling Survey Available for 22 Dell Street



Indoor Air Sampling Checklist

Sampling Location:
22 Dell Street

Sample ID: **04516-22 Dell Street-22-Dell-B**

Date:	1/22/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M111	Sampling Start Time:	5:46:00 PM
Flow Regulator ID:	MC066	Sampling Finish Time:	9:25:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **27in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	22	20
Barometric Pressure (in WC):	30.60	30.58
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy/flurry	cloudy/flurry

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	67	66
Barometric Pressure (in WC):	30.63	30.61

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.1' above floor**



Indoor Air Sampling Checklist

Sampling Location:

22 Dell Street

Sample ID: **04516-22 Dell Street-22-Dell-1**

Date: **1/22/2007**

Sample Type: **Summa**

Sampling personnel: **K. Wolfe**

Analysis Method: **TO15**

Summa Canister ID: **M160**

Sampling Start Time: **5:49:00 PM**

Flow Regulator ID: **MC062**

Sampling Finish Time: **9:27:00 PM**

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **7 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature (°F):

22

20

Barometric Pressure (in WC):

30.60

30.58

Prevailing Wind Direction:

none

none

General Weather Conditions:

cloudy/flurry

cloudy/flurry

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature (°F):

70

70

Barometric Pressure (in WC):

30.62

30.61

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **3 adults (2 were maybe teens)**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.1' above floor**

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Indoor Air



Survey Completed by: **S. Slater K. Wolfe**

Date: **1/22/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **31-33 Knowlton Street**

Property Contact: **Rich Magnan (Owner)**

Contact's Phone: Home: **(617) 628-0677**
3360

Work:

Cell: **(781) 244-**

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **0**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **grass concrete**

Number of Floors: Below grade: **1** At or above grade: **3**

Basement Size: **1210ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **Poured Concrete**

Integrity: **Concrete with Cracks**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input checked="" type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
- ☐ Individual Air Conditioning Units
- ☐ Bathroom Ventilation Fans
- ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
- ☐ Other:

Type of fuel utilized:

- ☐ Natural Gas
- ☐ Electric
- ☒ Fuel Oil
- ☐ Wood
- ☐ Coal
- ☐ Solar
- ☐ Kerosene
- ☐ Outside (Fresh) Air Intake

Septic system?

Irrigation/private well?

Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☐ Insulation
- ☐ Storm Windows
- ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	10 cans paint, 3 cans paint thinner in basement	<input type="checkbox"/>
<input checked="" type="checkbox"/> Cleaning solvents	1 container soft scrub in basement	<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	3 containers dish soap- 1st floor	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input checked="" type="checkbox"/> Air fresheners	1 on 1st floor; strong odor	<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **0 ppb for all screened areas**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **2nd floor** Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? ~1000SF

PART VII – ADDITIONAL COMMENTS

8 basement windows. Mentioned (on 1/22/07) that sometimes gets water up through floor



Indoor Air Sampling Checklist

Sampling Location:
31-33 Knowlton Street

Sample ID: **04516-31-33 Knowlton Street-33-Know-1**

Date:	1/22/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M028	Sampling Start Time:	10:38:00 AM
Flow Regulator ID:	MC098	Sampling Finish Time:	2:19:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29.5 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	24	25
Barometric Pressure (in WC):	30.60	30.61
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	73	73
Barometric Pressure (in WC):	30.60	30.61

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

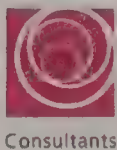
Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.9' above floor**

GEI



Consultants

Indoor Air Sampling Checklist

Sampling Location:
31-33 Knowlton Street

Sample ID: **04516-31-33 Knowlton Street-33-Know-B**

Date:	1/22/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M069	Sampling Start Time:	10:33:00 AM
Flow Regulator ID:	MC067	Sampling Finish Time:	2:20:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31.5 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	24	25
Barometric Pressure (in WC):	30.60	30.61
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	68	69
Barometric Pressure (in WC):	30.62	30.63

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.0' above floor**



Outdoor Air Sampling Checklist

Sampling Location:

Dell Street

Sample ID: **04516-Dell Street-O-1A**

Date:	1/22/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M161	Sampling Start Time:	9:10:00 AM
Flow Regulator ID:	MC058	Sampling Finish Time:	12:54:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	23	25
Barometric Pressure (in WC):	30.60	30.61
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	23	25
Barometric Pressure (in WC):	30.60	30.61

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

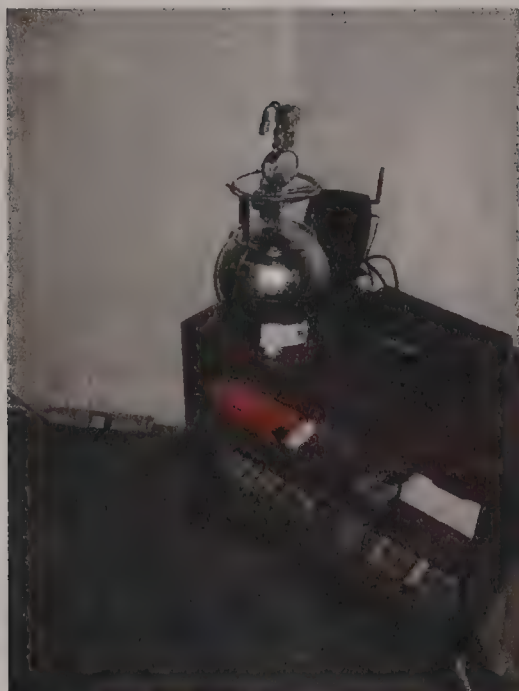
Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **14 Dell backyard. Mr Griffin offered to put the outdoor sample in his backyard b/c often smells "solvents" and is curious if they test. I Put the summa near the crumbling retaining wall.**

Air intake at: **4.3' above ground**

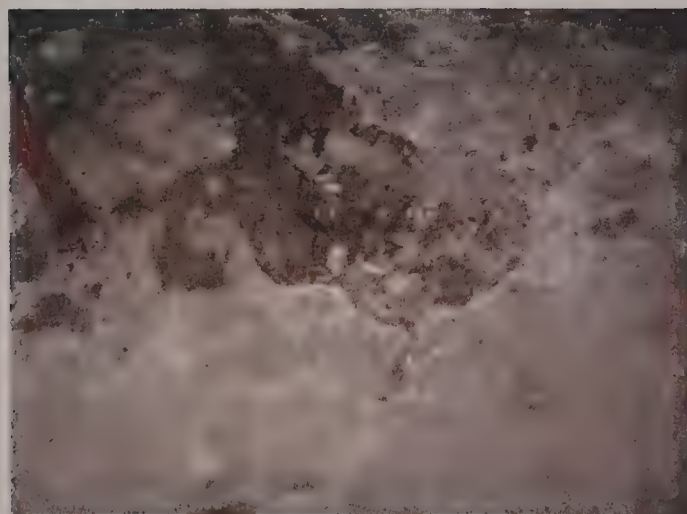
Residential Air Testing 1-22-07



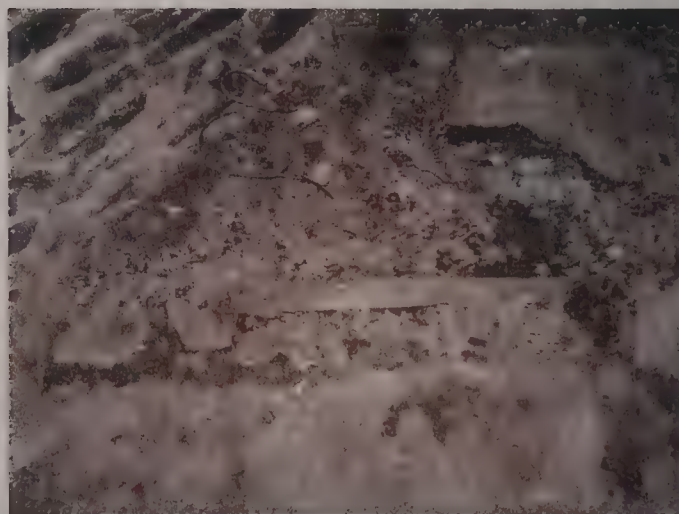
045162-9Dell-1



045162-9Dell-B&C



9 Dell Basement Floor



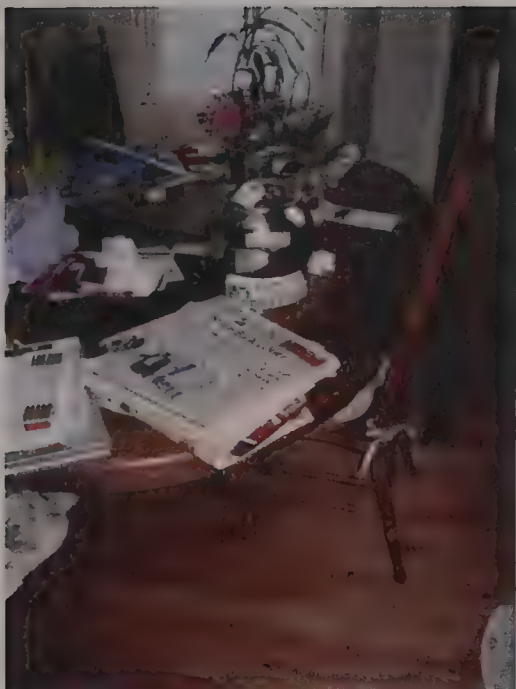
9 Dell Basement Floor



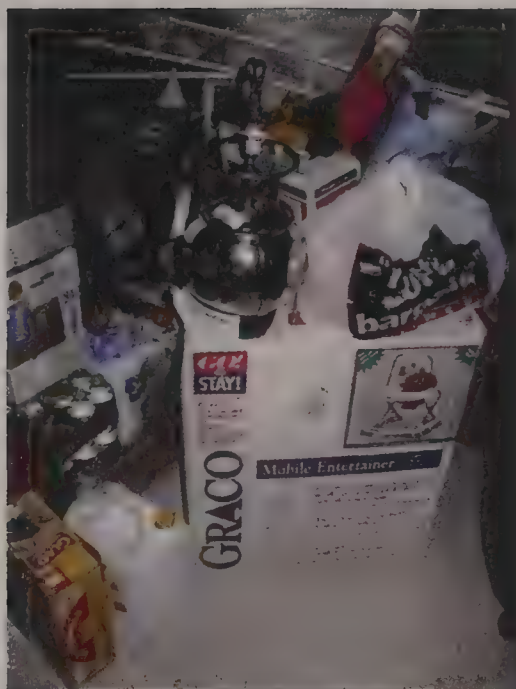
045162-10Dell-1



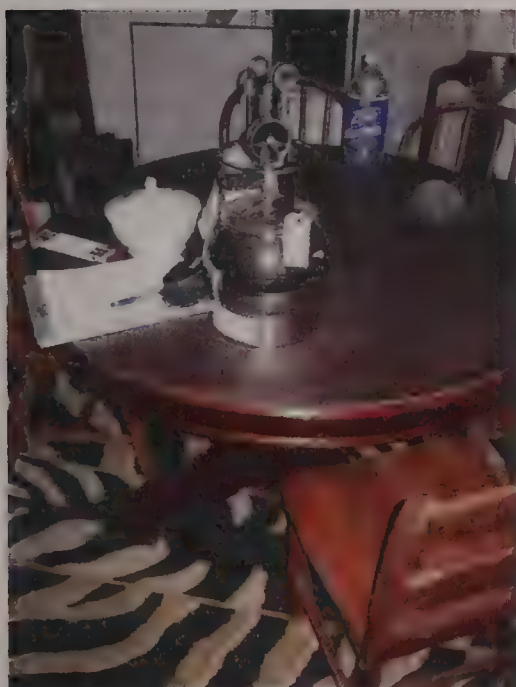
045162-10Dell-B



045162-14Dell-1



045162-14Dell-B



045162-16Dell-1



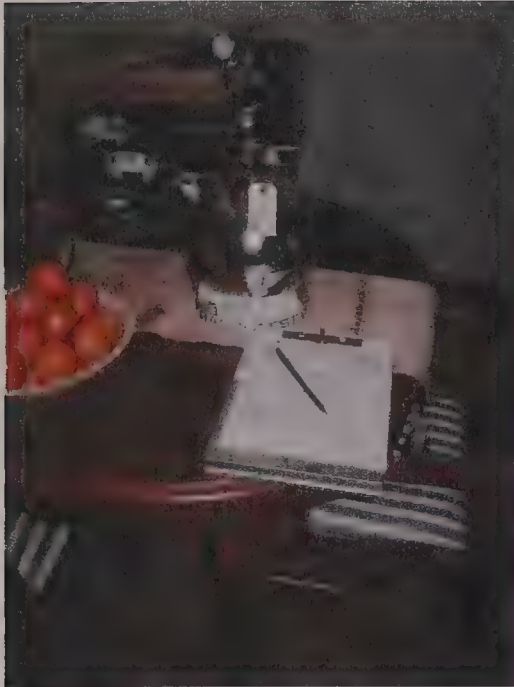
045162-16Dell-B



045162-22Dell-1



045162-22Dell-B



045162-31-33Knowlton-1



045162-31-33Knowlton-B



045162-Dell-O-1A

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Indoor Air



Survey Completed by: **K. Wolfe**

Date: **1/23/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **6 Dell Street**

Property Contact: **Anne Whalen (Owner)**

Contact's Phone: Home: **(617) 625-8933**

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **1**

PART II – BUILDING CHARACTERISTICS

Building Type: **Single-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Concrete**

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **498ft²**

Foundation Type: **Full Basement**

Basement Floor: **Dirt**

Foundation Materials: **Poured Concrete**

Integrity: **Earthen Floor**

Foundation Integrity: **Many cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input checked="" type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
- ☐ Individual Air Conditioning Units
- ☐ Bathroom Ventilation Fans
- ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
- ☐ Other:

Type of fuel utilized:

- ☒ Natural Gas
- ☐ Electric
- ☐ Fuel Oil
- ☐ Wood
- ☐ Coal
- ☐ Solar
- ☐ Kerosene
- ☐ Outside (Fresh) Air Intake

Septic system? No

Irrigation/private well? No

Existing subsurface depressurization (radon) system in place? No Radon System

Has the building been weatherized with any of the following:

- ☐ Insulation
- ☐ Storm Windows
- ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	1 can paint basement	<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	1 bottle car wash, 3 bottles dish soap in basement	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **0.0 ppm in all areas screened with PID.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

Basement floods.



Indoor Air Sampling Checklist

Sampling Location:

6 Dell Street

Sample ID: **04516-6 Dell Street-6-Dell-B**

Date:	1/23/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M073	Sampling Start Time:	8:41:00 AM
Flow Regulator ID:	MC072	Sampling Finish Time:	12:27:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **32in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **7 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	24	27
Barometric Pressure (in WC):	30.39	30.25
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	67	67
Barometric Pressure (in WC):	30.47	30.41

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.5 above floor**



Indoor Air Sampling Checklist

Sampling Location:

6 Dell Street

Sample ID: **04516-6 Dell Street-6-Dell-1**

Date: **1/23/2007**

Sample Type: **Summa**

Sampling personnel: **K. Wolfe**

Analysis Method: **TO15**

Summa Canister ID: **M070**

Sampling Start Time: **8:44:00 AM**

Flow Regulator ID: **MFC040**

Sampling Finish Time: **12:28:00 PM**

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature (°F):

24

27

Barometric Pressure (in WC):

30.39

30.25

Prevailing Wind Direction:

none

none

General Weather Conditions:

cloudy

cloudy

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature (°F):

71

72

Barometric Pressure (in WC):

30.44

30.35

PID readings at sample location (ppm)

0

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **Yes** If yes, provide detail: **1 adult woman**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **4.5' above floor**

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Indoor Air



Survey Completed by: **S. Slater T. Daigle**

Date: **1/23/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **35-37 Knowlton Street**

Property Contact: **David Stiles (Owner)**

Contact's Phone: Home: **(617) 666-1872**
1303

Work:

Cell: **(617) 893-**

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **5**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-Family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Grass and asphalt**

Number of Floors: Below grade: **1** At or above grade: **3**

Basement Size: **1252ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete & Dirt**

Foundation Materials: **Brick**

Integrity: **Concrete with Cracks**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input checked="" type="checkbox"/> Other: gas 1st/3rd oil 2nd furnace heater stove | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
- ☒ Individual Air Conditioning Units
- ☐ Bathroom Ventilation Fans
- ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
- ☐ Other: 1st/3rd

Type of fuel utilized:

- ☒ Natural Gas
- ☐ Electric
- ☒ Fuel Oil
- ☐ Wood
- ☐ Coal
- ☐ Solar
- ☐ Kerosene
- ☐ Outside (Fresh) Air Intake

Septic system? **No**

Irrigation/private well? **No**

Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☒ Insulation
- ☐ Storm Windows
- ☒ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Gas-powered equipment	snowblower and lawnmower in back of basement.	<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	rear of basement near stairs & furnace	<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	3 containers in basement	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **Front of house (Knowlton Street side) registered no change- 0 ppb.
Rear of house ranged from 2 to 79 ppb when held still- as high as 500 ppb when moving.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **Daily** Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? **~75% of basement area**

PART VII – ADDITIONAL COMMENTS

Front of house has damage near water pipes. Did not test 1st floor at Mr. Stiles' request.



Indoor Air Sampling Checklist

Sampling Location:
35-37 Knowlton Street

Sample ID: **04516-35-37 Knowlton Street-37-Know-1**

Date: **1/23/2007** Sample Type: **Summa**
Sampling personnel: **K. Wolfe** Analysis Method: **TO15**
Summa Canister ID: **M035** Sampling Start Time:
Flow Regulator ID: **MC070** Sampling Finish Time:

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: in/hr

Pressure gauge reading (After sample collected): Flow Controller: in/hr

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):		
Barometric Pressure (in WC):		
Prevailing Wind Direction:		
General Weather Conditions:		

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):		
Barometric Pressure (in WC):		

PID readings at sample location (ppm)

Photographs taken before sampling? **No** Taken by:

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Did not test 1st floor at Mr. Stiles' request.**

Air intake at: **above floor**



Indoor Air Sampling Checklist

Sampling Location:
35-37 Knowlton Street

Sample ID: **04516-35-37 Knowlton Street-37-Know-B**

Date:	1/23/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M135	Sampling Start Time:	3:17:00 PM
Flow Regulator ID:	MC035	Sampling Finish Time:	6:55:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **6 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	24	22
Barometric Pressure (in WC):	30.34	30.26
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	67	67
Barometric Pressure (in WC):	30.36	30.30

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface:

Air intake at: **3.9' above floor**

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Indoor Air



Survey Completed by: **K. Wolfe**

Date: **1/23/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **60 Tufts Street, #4**

Property Contact: **Kate Castle (Owner)**

Contact's Phone: Home: **(617) 718-3073**

Work:

Cell: **6172567778**

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **1**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building: **Condominium building with open garage for condo tenants.**

Type of Ground Cover Around Outside of Building: **Concrete & mulch**

Number of Floors: Below grade: **1** At or above grade: **4**

Basement Size: **0ft²**

Foundation Type: **Finished Full Basement**

Basement Floor: **Concrete w/ cap**

Foundation Materials: **Poured Concrete**

Integrity: **Concrete; Good Integrity**

Foundation Integrity: **No cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|--|--|--|---|
| <input checked="" type="checkbox"/> Basement sump present? | <input checked="" type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|--|--|--|---|

Type of heating system:

- | | | | |
|--|--|---|--|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☐ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☐ Natural Gas
 ☐ Electric
 ☐ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☐ Insulation
 ☐ Storm Windows
 ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCESOther stationary sources nearby (gas stations, emission stacks, etc.): **Train****PART IV – INDOOR CONTAMINANT SOURCES**

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	2 containers (1st floor)	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Yes**

Results of screening / comments: **0.0 ppm. Basement ambient air readings range from 375-415 ppb.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? **Yes, Attached Garage** If so, is a car usually parked in the garage? ☒

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

Unknown foundation material- walls are sealed. Other parts of the building appear to have brick and mortar foundations.



Indoor Air Sampling Checklist

Sampling Location:
60 Tufts Street, #4

Sample ID: **04516-60 Tufts Street, #4-4B**

Date:	1/23/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M117	Sampling Start Time:	8:04:00 AM
Flow Regulator ID:	MFC057	Sampling Finish Time:	11:43:00 AM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **32in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **6 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	24	27
Barometric Pressure (in WC):	30.39	30.25
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	67	67
Barometric Pressure (in WC):	30.43	30.37

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Dead mouse on basement floor.**

Air intake at: **3.9' above floor**



Indoor Air Sampling Checklist

Sampling Location:
60 Tufts Street, #4

Sample ID: **04516-60 Tufts Street, #4-unit-4**

Date:	1/23/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M163	Sampling Start Time:	8:01:00 AM
Flow Regulator ID:	MC061	Sampling Finish Time:	11:42:00 AM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	24	27
Barometric Pressure (in WC):	30.39	30.25
Prevailing Wind Direction:	none	none
General Weather Conditions:	cloudy	cloudy

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	69	70
Barometric Pressure (in WC):	30.41	30.36

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Condominium unit located on the first floor.**

Air intake at: **3.8' above floor**



Outdoor Air Sampling Checklist

Sampling Location:

Dell Street

Sample ID: **04516-Dell Street-O-1B**

Date: **1/23/2007**

Sample Type: **Summa**

Sampling personnel: **K. Wolfe**

Analysis Method: **TO15**

Summa Canister ID: **M112**

Sampling Start Time: **8:14:00 AM**

Flow Regulator ID: **MFC025**

Sampling Finish Time: **11:53:00 AM**

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature (°F):

24

27

Barometric Pressure (in WC):

30.39

30.25

Prevailing Wind Direction:

none

none

General Weather Conditions:

cloud

cloudy

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature (°F):

24

27

Barometric Pressure (in WC):

30.39

30.25

PID readings at sample location (ppm)

0

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface: **Boards up on retaining wall.**

Air intake at: **4.3' above ground**

Residential Air Sampling 1-23-07



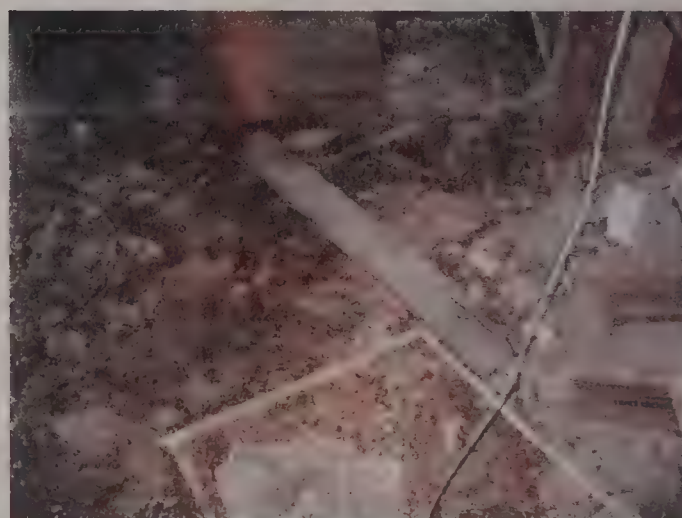
045162-6Dell-1



045162-6Dell-B



6 Dell Basement Floor



6 Dell Basement Floor



045162-35-37Knowlton-B



045162-60Tufts-Unit4



045162-60Tufts-Unit4B



045162-Dell-O-1B

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Indoor Air



Survey Completed by: **K. Wolfe T. Daigle**
Site Name: **50 Tufts Street, Somerville, MA**

Date: **2/14/2007**
Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **91-93 Franklin Street**

Property Contact: **()**

Contact's Phone: Home:

Work:

Cell:

Building Occupants: Children under age 13:

Children age 13-18:

Adults:

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building: **Duplex**

Type of Ground Cover Around Outside of Building: **Grass, conc, asphalt**

Number of Floors: Below grade: **1** At or above grade: **0**

Basement Size: **1600ft²**

Foundation Type: **Full Basement**

Basement Floor: **Dirt**

Foundation Materials: **Stone & bricks**

Integrity: **Earthen Floor**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input checked="" type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☐ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☐ Natural Gas
 ☐ Electric
 ☒ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☐ Insulation
 ☐ Storm Windows
 ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCESOther stationary sources nearby (gas stations, emission stacks, etc.): **Railroad****PART IV – INDOOR CONTAMINANT SOURCES**

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input checked="" type="checkbox"/> Gasoline storage cans	empty light gas can near water heaters rear bsment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Gas-powered equipment	lawn mower behind water heaters	<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	many containers on shelves (East side)	<input type="checkbox"/>
<input checked="" type="checkbox"/> Cleaning solvents	some small bottles dispensed throughout	<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	febreeze, soft soap	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input checked="" type="checkbox"/> Polishes / waxes	with paints on east side	<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input checked="" type="checkbox"/> Furniture / floor polish	with paints on east side	<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input checked="" type="checkbox"/> Hobbies - glues, paints, etc.	PVC primer & glue near water heater	<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor?

PID screening of cracks in wall/ floor and/or wall/floor interface:

PID screening above space above drain sump?

Results of screening / comments:

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

Small concrete slabs beneath water heaters.



Indoor Air Sampling Checklist

Sampling Location:
91-93 Franklin Street

Sample ID: **04516-91-93 Franklin Street-93-Franklin-1**

Date:	2/14/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M059	Sampling Start Time:	8:47:00 AM
Flow Regulator ID:	MFC32	Sampling Finish Time:	12:42:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **2.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	35.4	36.8
Barometric Pressure (in WC):	29.86	29.42
Prevailing Wind Direction:	SW	NE
General Weather Conditions:	snow/sleet	snow/sleet

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	70.8	63
Barometric Pressure (in WC):	29.91	29.53

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **Yes** If yes, how long? **15 min**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **Yes**

Were any of the residents home during sampling? **Yes** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Approximately 2" of snow accumulated during sampling.**

Air intake at: **3'6" above floor**



Indoor Air Sampling Checklist

Sampling Location:
91-93 Franklin Street

Sample ID: **04516-91-93 Franklin Street-93-Franklin-B**

Date:	2/14/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M130	Sampling Start Time:	8:55:00 AM
Flow Regulator ID:	MC055	Sampling Finish Time:	12:47:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	35.4	36.8
Barometric Pressure (in WC):	29.86	29.42
Prevailing Wind Direction:	SW	NE
General Weather Conditions:	snow/sleet	snow/sleet

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	51.9	48
Barometric Pressure (in WC):	29.92	29.53

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **Yes**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Approximately 2" of snow accumulated during sampling.**

Air intake at: **4'6" above floor**

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Indoor Air



Survey Completed by: **K. Wolfe S. Slater**
Site Name: **50 Tufts Street, Somerville, MA**

Date: **2/14/2007**
Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **30-40 Alston Street**

Property Contact: **Tony Lafuente** ()

Contact's Phone: Home: **4930**

Work:

Cell: **(617) 590-**

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **30**

PART II – BUILDING CHARACTERISTICS

Building Type: **Commerical**

Describe Building: **Long commercial building, lofted areas in places**

Type of Ground Cover Around Outside of Building: **concrete and asphalt**

Number of Floors: Below grade: **0** At or above grade: **1**

Basement Size: **18349ft²**

Foundation Type: **Slab on grade**

Basement Floor: **slab**

Foundation Materials:

Integrity: **Concrete with Cracks**

Foundation Integrity:

Basement Use: **Other**

Moisture Conditions In Basement:

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> Hot Air Circulation | <input checked="" type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning ☐ Individual Air Conditioning Units ☐ Bathroom Ventilation Fans ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan ☒ Other: 2,240 sq. ft. of building is air conditioned

Type of fuel utilized:

- ☒ Natural Gas ☐ Electric ☐ Fuel Oil ☐ Wood
- ☐ Coal ☐ Solar ☐ Kerosene ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☐ Insulation ☐ Storm Windows ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor?

PID screening of cracks in wall/ floor and/or wall/floor interface:

PID screening above space above drain sump?

Results of screening / comments: **Elevated PID readings were not observed during the building survey.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **towards 40 end** Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☒ When were dry-cleaned clothes last brought into the building? **less than 3 wks ago**

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS



Indoor Air Sampling Checklist

Sampling Location:
30-40 Alston Street

Sample ID: **04516-30-40 Alston Street-40-Alston-1**

Date:	2/14/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M049	Sampling Start Time:	9:11:00 AM
Flow Regulator ID:	MC075	Sampling Finish Time:	1:10:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **7 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	35.4	36.8
Barometric Pressure (in WC):	29.86	29.42
Prevailing Wind Direction:	SW	NE
General Weather Conditions:	snow/sleet	snow/sleet

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	52.7	51
Barometric Pressure (in WC):	29.87	29.44

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **Yes**

Was there significant precipitation within 12 hours of (or during) the sampling event? **Yes**

Were any of the residents home during sampling? **No** If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Approximately 2 inches of snow accumulated during sampling.**

Air intake at: **4' above floor**



Indoor Air Sampling Checklist

Sampling Location:
30-40 Alston Street

Sample ID: **04516-30-40 Alston Street-32-Alston-1**

Date:	2/14/2007	Sample Type:	Summa
Sampling personnel:	K. Wolfe	Analysis Method:	TO15
Summa Canister ID:	M087	Sampling Start Time:	9:20:00 AM
Flow Regulator ID:	MFC030	Sampling Finish Time:	1:13:00 PM

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	35.4	36.8
Barometric Pressure (in WC):	29.86	29.42
Prevailing Wind Direction:	SW	NE
General Weather Conditions:	snow/sleet	snow/sleet

Environmental Conditions (At Sample Location):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature (°F):	68.7	68
Barometric Pressure (in WC):	29.87	29.43

PID readings at sample location (ppm) **0**

Photographs taken before sampling? **Yes** Taken by: **K. Wolfe**

Was the building aired out prior to sample collection? **No** If yes, how long?

Windows open? **No** Ventilation fans? **Yes**

Was there significant precipitation within 12 hours of (or during) the sampling event? **Yes**

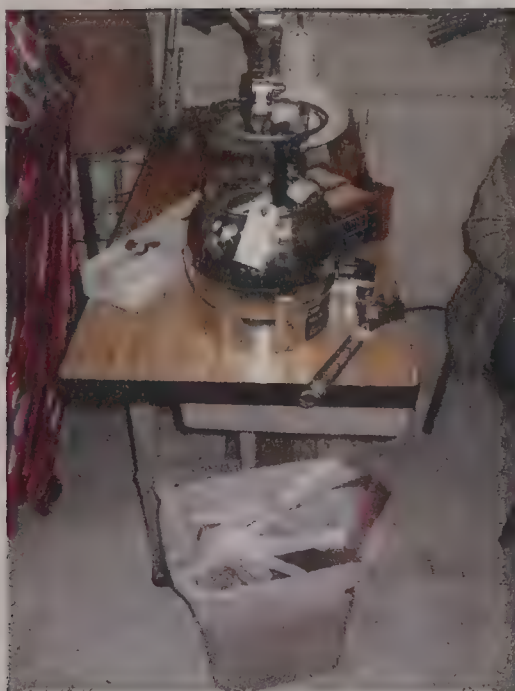
Were any of the residents home during sampling? **Yes** If yes, provide detail: **4 workers**

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe below:

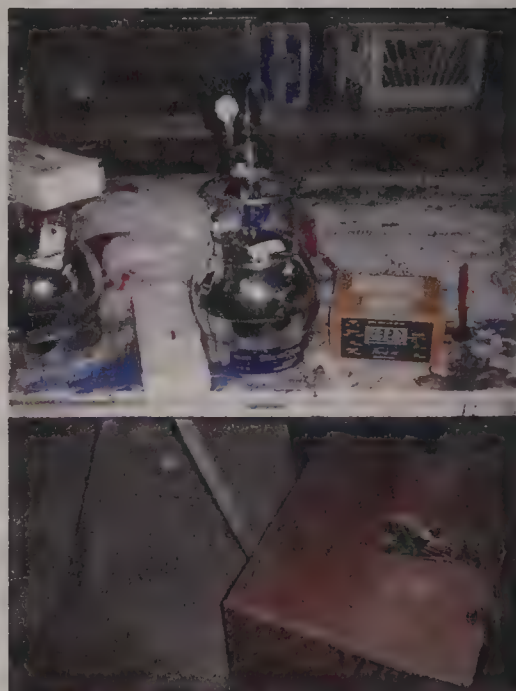
Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from floor surface: **Approximately 2 inches of snow accumulated during sampling.**

Air intake at: **3'11" above floor**

Residential Air Sampling 2-14-07



045162-32Alston-1



045162-40Alston-1



40 Alston Street



40 Alston Street



045162-93Franklin-1



045162-93Franklin-B



93 Franklin Street Basement



93 Franklin Street Basement



93 Franklin Street Basement

Capuano Early Childhood Center



PRE-SAMPLING FIELD CHECKLIST FOR INDOOR AIR SAMPLING

Survey Completed by: Krista Wolfe Date: 12/26/06
Site Name: Tufts Street (Capuano School) Case #: _____

Part I - Occupants

Building Address: _____
Property Contact: Brian Baker (EHE) Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell () _____
Building occupants: Children under age 13 _____ Children age 13-18 _____ Adults _____

Part II - Building Characteristics

Building type: single-family residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: Middle school
Number of floors - below grade: 0 (full basement / crawl space / slab) at or above grade: 2
Basement size: _____ ft² ~~Basement floor:~~ concrete / dirt / floating / other (specify): _____
Foundation type: finished basement / full basement / partial basement / crawl space / slab on grade
Foundation materials: poured concrete / cinder blocks / stone / other (specify) _____
Foundation integrity: no crack or open joints / moderate cracks or open joints / many cracks or open joints
~~Basement / slab floor:~~ concrete; good integrity / concrete with cracks / earthen floor / carpet or flooring
~~Basement use:~~ storage; infrequent use / recreation or living space / bedrooms / other (specify) _____
Type of ground cover around outside of building: grass / concrete / asphalt / other (specify) some rubber
~~Moisture conditions in basement:~~ wet / damp / dry / other (specify) _____

~~Basement sump present?~~ Yes/No Sump pump? Yes/No Standing water in sump? Yes/No Product in sump? Yes/No

Type of heating system (circle all that apply):
hot air circulation hot air radiation wood steam radiation hot water radiation
kerosene heater electric baseboard heat pump other (specify): Hot water Hi-Corona

Type of ventilation system (circle all that apply):
→ central air conditioning mechanical fans bathroom ventilation fans
individual air conditioning units kitchen range hood fan other (specify): central system for Admin
Spec at Kitchen / Gym / Cafeteria

Type of fuel utilized (circle all that apply):
Natural gas / electric / fuel oil / wood / coal / solar / kerosene / outside (fresh) air intake All classrooms have

Septic system? Yes / Yes (but not used) / No Irrigation/private well? Yes / Yes (but not used) / No

Building address: _____

Existing subsurface depressurization (radon) system in place? Yes / No and running? Yes / No

Has the building been weatherized with any of the following:
insulation / storm windows / energy efficient windows Other (specify): _____

Comments:

Part III - Outside Contaminant Sources

MADEP Comprehensive Site List (1000-ft. radius): _____

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources – Use additional sheets if necessary

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	1	2	Location(s)	3	4	Removed Prior to Sampling? (Yes / No / NA)
Gasoline storage cans						
Gas-powered equipment						
Kerosene storage cans						
Paints / thinners / strippers	1					
Cleaning solvents	10	11				
Oven cleaners						
Carpet / upholstery cleaners						
Other house cleaning products						
Moth balls						
Polishes / waxes						
Insecticides						
Furniture / floor polish						
Nail polish / polish remover						
Hairspray						
Cologne / perfume						
Air fresheners						
Fuel tank (inside building)	If Yes is, is there an odor near tank? None / weak / strong					NA
Wood stove or fireplace						NA
New furniture / upholstery						
New carpeting / flooring						NA
Recent painting in building?						NA
Hobbies - glues, paints, etc.	2	3				

Part V – PID Screening - Use additional sheets if necessary

PID screening of annular space around utility pipes through basement wall / floor? *Yes / no / not accessible*

PID screening of cracks in wall/ floor and/or wall/floor interface: *Yes / no / not accessible / no cracks*

PID screening above space above drain sump? *Not applicable / Yes / no / not accessible*

Results of screening / comments : *see plan. EHE went around w/PPB RAE and only had results in fire pump room (max 136 ppb), in bathroom of room 148.*

Part V – Miscellaneous Items - Use additional sheets if necessary

Do any occupants of the building smoke? *Yes / No* How often? _____

Has anyone smoked within the building within the last 48 hours? *Yes / No*

Does the building have an attached garage? *Yes / No*

If so, is a car usually parked in the garage? *Yes / No*

Do the occupants of the building have their clothes dry-cleaned? *Yes / No*

When were dry-cleaned clothes last brought into the building? *No*

Have the occupants ever noticed any unusual odors in the building? *Yes / No*

Describe (with location): _____

Any known spills of a chemical immediately outside or inside the building? *Yes / No*

Describe (with location): _____

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? *Yes / No*

If so, when and which chemicals? _____

Capuano Site Visit 12-26-06



Admin Kitchen



Admin Reception



Cafetorium



Cafetorium



Custodian & Kitchen Men's Room



Custodian & Kitchen Women's Room



Custodian Office



Custodian Storage



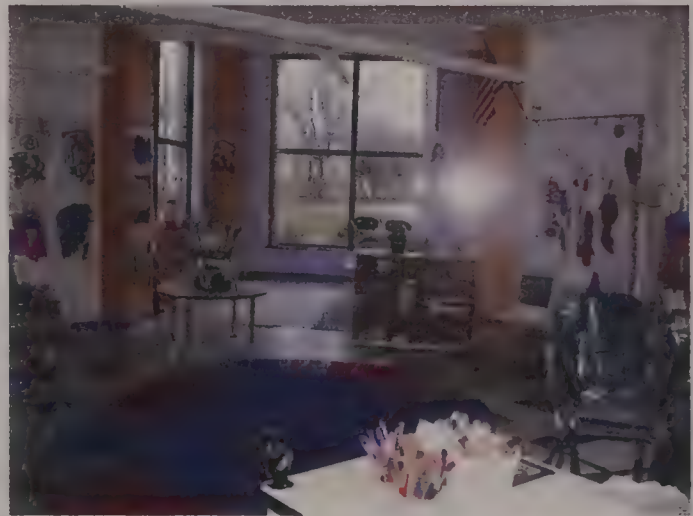
Gymnasium



Kitchen Storage



Room 101C



Room 108



Room 108



Room 108



Room 121



Room 122



Room 124



Room 125



Room 125



Room 125



Room 126



Room 127 (Men's Room)



Room 131 (Women's Room)



Room 133



Room 134



Room 136



Room 137



Room 138



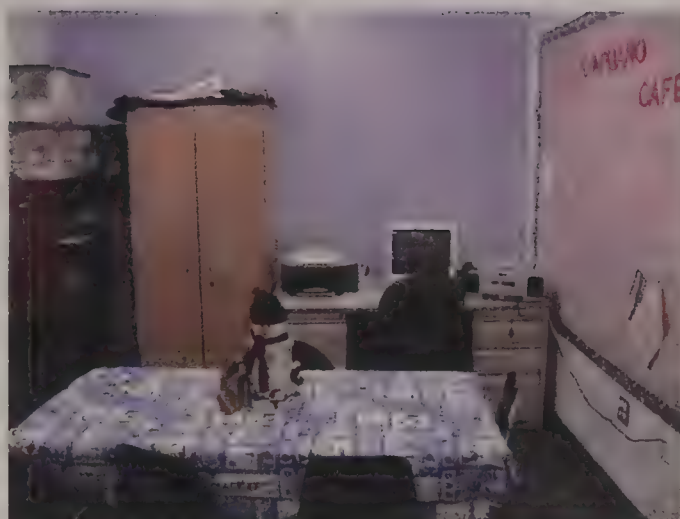
Room 139



Room 142



Room 143



Room 144



Room 145



Room 146



Room 146



Room 146



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-150610-
Room 101A

Date: 12/27/06

Sampling personnel: K. Wolfe

Summa Canister ID: M143

Flow Regulator ID: MF0017

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0749

Sampling Finish Time: 1220

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): 31 Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): 15 Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

43

29.70

none

cloudy

After Sampling

43

29.71

S

sunny

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

70.8

29.76

After Sampling

71.0

29.78

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0749 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? NO

Windows open? Ventilation fans? NO

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: 2 jaiturs in bldg

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NO

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.9

Flow reg not working properly. I gave it an extra half hr- but it only got down to B intake. Needed to get the samples to Accutest & couldn't wait any longer
In office 101C



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 12/27/06

Sampling personnel: K. Wolfe

Summa Canister ID: M085

Flow Regulator ID: MFC048

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0744

Sampling Finish Time: 1033

Sample ID: 045162-150662-
Room 108A

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 20 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 3.5 in/hr Separate gauge: ---

Environmental Conditions (Outside):

	Before Sampling	After Sampling
Temperature:	43	44
Barometric Pressure:	29.70	29.71
Prevailing Wind Direction:	none	S
General Weather Conditions:	cloudy	sunny

Environmental Conditions (At Sample Location):

	Before Sampling	After Sampling
Temperature:	68.9	73.9
Barometric Pressure:	29.76	29.80

PID readings at sample location (ppm)

0
0744

Photographs taken before sampling? Yes If Yes, what time: Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? NO

Windows open? Ventilation fans? NO

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: 2 janitors in bldg

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NO

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 4.6'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 12/27/06

Sampling personnel: K. Wolfe

Summa Canister ID: m002

Flow Regulator ID: MFC014

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0738

Sampling Finish Time: 1051

Sample ID: 045162-1506ten -
Room 125A

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): 30 Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

43
29.70

none
cloudy

After Sampling

44
29.71

S
cloudy

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

69.9
29.74

After Sampling

70.8
29.80

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0738 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? NO

Windows open? Ventilation fans? NO

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: 2 joiners in bldg

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NO

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.1'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 12/20/06

Sampling personnel: K. Wolfe

Summa Canister ID: m037

Flow Regulator ID: mc059

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0732

Sampling Finish Time: 1050

Sample ID: 045162-150660-
Room 146A

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): 28.5 Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): 0.5 Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

	Before Sampling	After Sampling
Temperature:	43	44
Barometric Pressure:	29.70	29.71
Prevailing Wind Direction:	none	S
General Weather Conditions:	cloudy	Sunny

Environmental Conditions (At Sample Location):

	Before Sampling	After Sampling
Temperature:	70.8	68.4
Barometric Pressure:	29.73	29.79

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0732 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? No

Windows open? Ventilation fans? No

Was there significant precipitation within 12 hours of (or during) the sampling event? No

Were any of the residents home during sampling? If yes, provide detail: 2 janitors in bldg

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

N

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.6'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-1506W -
0-1A

Date: 12/27/06

Sampling personnel: K. Wolfe

Summa Canister ID: m088

Flow Regulator ID: m0012

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0701

Sampling Finish Time: 1037

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): 29.5 Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): 0.5 Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

• Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

43

29.70

none

cloudy

After Sampling

44

29.71

S

sunny

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

43

29.70

After Sampling

44

29.71

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0701 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: NA

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.4'
in fence by back entrance



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 12/27/06

Sampling personnel: K. Wolfe

Summa Canister ID: M102

Flow Regulator ID: MFC0008

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0715

Sampling Finish Time: 1042

Sample ID: 045162-150642 -

0-2A

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): ³⁰ Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): ⁵ Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

43

Barometric Pressure:

29.70

Prevailing Wind Direction:

none

General Weather Conditions:

cloudy

After Sampling

44

29.71

S

sunny

Environmental Conditions (At Sample Location):

Temperature:

43

Barometric Pressure:

29.70

After Sampling

44

29.71

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: ⁰⁷¹⁵ Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: NA

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 4.4'

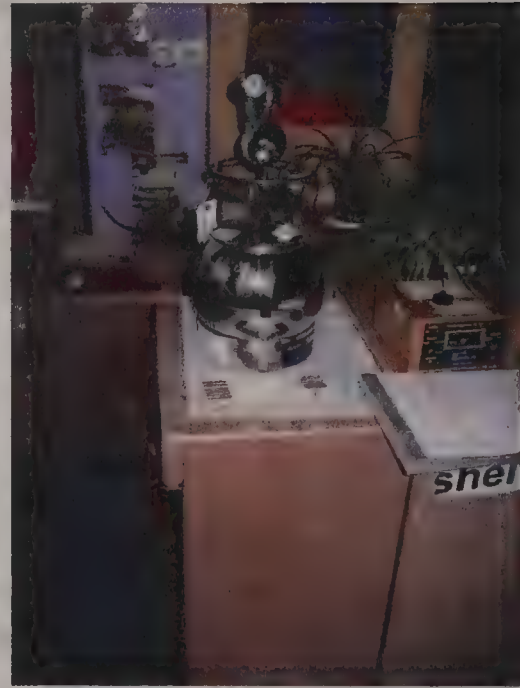
In tree

Charlie
3/20/07

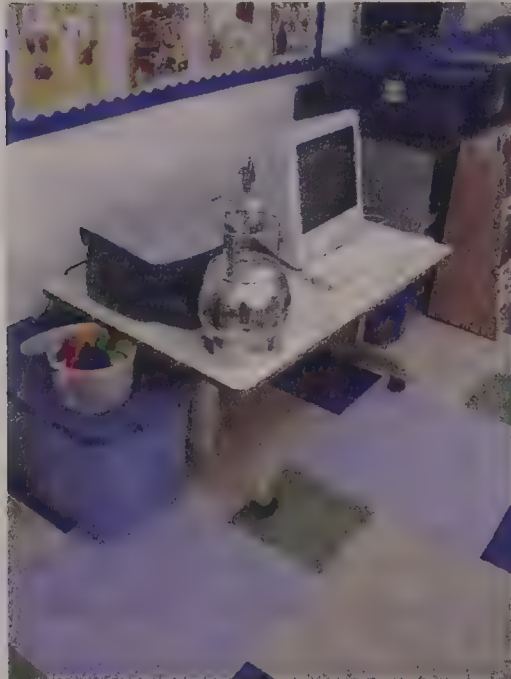
Capuano Air Sampling 12-27-06



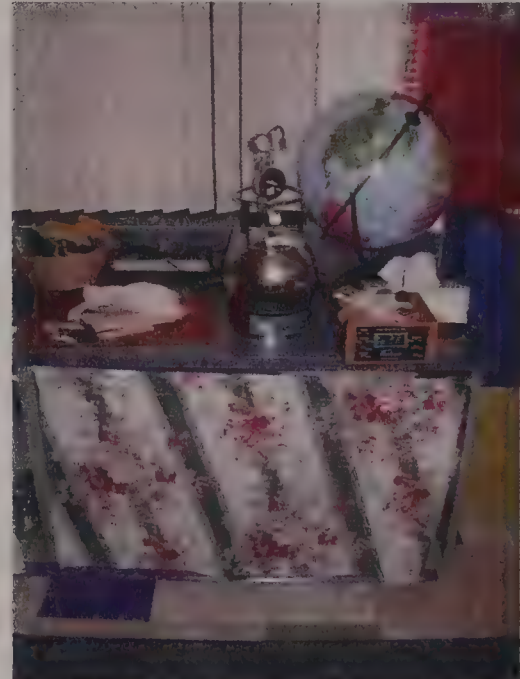
045162-150Glen-Room101A



045162-150Glen-Room108A



045162-150Glen-Room125A



045126-150Glen-Room146A



045162-150Glen-O-1A



045162-150Glen-O-2A



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 12/28/06

Sampling personnel: K. Wolfe

Summa Canister ID: m063

Flow Regulator ID: ~~m06009~~ m0071

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0801

Sampling Finish Time: 1051

Sample ID: 045162-1506len -

Room 101B

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): 28 Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): 0.5 Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

35

30.25

none

Sunny

After Sampling

36

30.34

none

Sunny

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

72

30.34

After Sampling

73

30.34

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0801 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.9'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-1506ew-

Room 108B

Date: 12/28/06

Sampling personnel: K. Wolfe

Summa Canister ID: m008

Flow Regulator ID: m0084

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0753

Sampling Finish Time: 1111

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

30.5

Pressure gauge reading (Pre-opening): Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: in/hr Separate gauge: ---

5

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

35

36

Barometric Pressure:

30.25

30.34

Prevailing Wind Direction:

none KAW

none

General Weather Conditions:

~~clear~~ sunny

Sunny

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

70

70

Barometric Pressure:

30.34

30.34.

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0753 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at

4.6'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 12/28/06

Sampling personnel: K. Wolfe

Summa Canister ID: M034

Flow Regulator ID: MC072

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0748

Sampling Finish Time: 1334

Sample ID: 045162-1506100

Room 125B

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

32

Pressure gauge reading (Pre-opening): Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: in/hr Separate gauge: ---

20

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

35

30.25

none

~~cloudy~~
sunny

After Sampling

36

30.34

none

sunny

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

71

30.34

After Sampling

72

30.34

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0748 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.1'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 12/28/06

Sampling personnel: K. Wolfe

Summa Canister ID: m107

Flow Regulator ID: mco70

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0742

Sampling Finish Time: 1047

Sample ID: 045162 - 14 150662

Room 146B

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): 39 Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

5

Before Sampling

Temperature:

35

Barometric Pressure:

30.25

Prevailing Wind Direction:

none

General Weather Conditions:

Sunny

After Sampling

36

30.34

none

Sunny

Environmental Conditions (At Sample Location):

Before Sampling

Temperature:

81

Barometric Pressure:

30.33

After Sampling

82

30.34

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0742 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at

3.6'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-1506-Len -

Room: 146C

Date: 12/28/06

Sampling personnel: K. Wolfe

Summa Canister ID: m152

Flow Regulator ID: m073

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0743

Sampling Finish Time: 1040

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): ³⁰ Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): ² Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

35

30.25

none

Sunny

After Sampling

36

30.34

none

sunny

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

81

30.33

After Sampling

82

30.34

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0742 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at

3.6'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 12/28/06

Sampling personnel: K. Wolfe

Summa Canister ID: m122

Flow Regulator ID: m0036

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0727

Sampling Finish Time: 1127

Sample ID: 045162-150645-
0-1B

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): 31 Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): 23 Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

35

30.25

none

Sunny

After Sampling

36

30.34

none

Sunny

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

35

30.25

After Sampling

36

30.34

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0727 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? NA

Windows open? Ventilation fans? NA

Was there significant precipitation within 12 hours of (or during) the sampling event? No

Were any of the residents home during sampling? If yes, provide detail: Na

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.4'
fence

Back up at 1203 (23 inHg) until
1338 (19 inHg)



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-15XGw-
0-2B

Date: 12/28/06
Sampling personnel: K. Wolfe
Summa Canister ID: M018
Flow Regulator ID: MFC041
Sample Type / Analysis Method: TO15/Summa
Sampling Start Time: 0720
Sampling Finish Time: 1120

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No
Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): 30 Flow Controller: in/hr Separate gauge: ---
Pressure gauge reading (After sample collected): 15 Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

	Before Sampling	After Sampling
Temperature:	35	36
Barometric Pressure:	30.25	30.34
Prevailing Wind Direction:	none	none
General Weather Conditions:	sunny	sunny

Environmental Conditions (At Sample Location):

	Before Sampling	After Sampling
Temperature:	35	36
Barometric Pressure:	30.25	30.34

PID readings at sample location (ppm) 0 0

Photographs taken before sampling? Yes If Yes, what time: 0720 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? NA

Windows open? Ventilation fans? NA

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: NA

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 4.4'
tree

Spoke to Frank at Acutest. He said (regarding the slow intake) that it was better to have a 4-hour sample than a full canister.

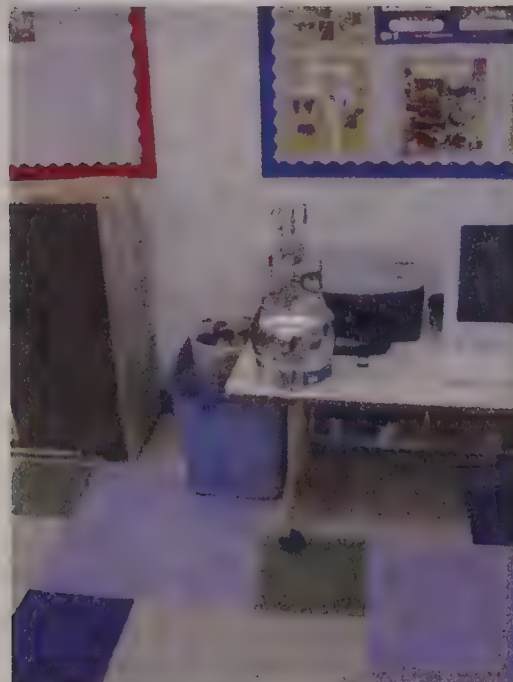
Capuano Air Sampling 12-28-06



045162-150Glen-101B



045162-150Glen-108B



045162-150Glen-125B



045162-150Glen-146B



045162-150Glen-O-1B



045162-150Glen-O-2B



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:

Room 138

Date: 11/2/08

Sample ID: 045162-Rm138

Sampling personnel: H. Ballantyne

Summa Canister ID: M104

Flow Regulator ID: MFC44

Sample Type / Analysis Method: Mod. 70-15

Sampling Start Time: 443 am (pm)

Sampling Finish Time: 844 am (pm)

Did Summa Canister go to ambient pressure? Yes / No

Vacuum pressure reported by Laboratory: _____

Pressure gauge reading (Pre-opening): Flow Controller: 3 Separate gauge: _____

Sampling

Pressure gauge reading (After sample collected): Flow Controller: 4 Separate gauge: _____

Environmental conditions (outside):

Temperature

Barometric Pressure

Prevailing wind direction:

General weather conditions

Before Sampling

37°F 45°F

30.14

WNW

calm/fair

After Sampling

32°F 40°F

30.26

W

calm/fair

Environmental conditions at sample location):

Temperature

Barometric Pressure

Before Sampling

62°F (thermostat)

30.14

After Sampling

62°F

30.26

PID readings at sample location (ppm)

0.0

0.0

Photographs taken before sampling? Yes / No If Yes, what time: 1640 Taken by: HAB

Photographs taken after sampling? Yes / No If Yes, what time: 2045 Taken by: HAB

Was the building aired out prior to sample collection? Yes / No If yes, how long? _____

Windows open? Yes / No Ventilation fans? Yes / No

Was there significant precipitation within 12 hours of (or during) the sampling event? Yes / No

Were any of the residents home during sampling? Yes / No If yes, provide detail: janitors present intermittently in nearby classrooms/hallways to clean rooms

Did any of the occupants NOT follow instruction for residents? Yes / No If yes, describe below

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

hand soap @ sink

finger paint (tempera) - 10 gallon containers below sink

sharpeners

play dough - cabinet beneath microwave

closed container of sidewalk chalk

crayons and markers in cabinet behind teachers desk

photo log on back →



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:

Rm 142

Date: 1/2/06

Sample ID: 045162 - Rm 142

Sampling personnel: H. Ballantyne

Summa Canister ID: M031

Flow Regulator ID: MFC29

Sample Type / Analysis Method: T0-15

Sampling Start Time: 449 am/pm

Sampling Finish Time: 851 am/pm

Did Summa Canister go to ambient pressure? Yes / No

Vacuum pressure reported by Laboratory: _____

Pressure gauge reading (Pre-opening): Flow Controller: 30 Separate gauge: _____
Sampling

Pressure gauge reading (After sample collected): Flow Controller: 4 Separate gauge: _____

Environmental conditions (outside):

Temperature

Barometric Pressure

Prevailing wind direction:

General weather conditions

Before Sampling

37°F ~~45°F~~

30.14

WEST NW

calm / fair

After Sampling

32°F ~~40°F~~

30.26

WEST

calm / fair

Environmental conditions at sample location):

Temperature

Barometric Pressure

Before Sampling

55°F (thermostat)

30.14?

After Sampling

55°F

30.26

PID readings at sample location (ppm)

0.0

0.0

Photographs taken before sampling? Yes / No If Yes, what time: 1645 Taken by: NAB

Photographs taken after sampling? Yes / No If Yes, what time: _____ Taken by: _____

Was the building aired out prior to sample collection? Yes / No If yes, how long? _____

Windows open? Yes / No Ventilation fans? Yes / No

Was there significant precipitation within 12 hours of (or during) the sampling event? Yes / No - rained yesterday

Were any of the residents home during sampling? Yes / No If yes, provide detail: custodians in hallways + neighboring classrooms intermittently

Did any of the occupants NOT follow instruction for residents? Yes / No If yes, describe below

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Sketch of sink (20)

1 gal container of Elmer's glue (1/2 full) next to sink (AB 1/2/06)

under sink cust; 1 gal tempera/washable paint, 3.2 fl oz fantastik, 3.2 fl oz windex

1 gal pink lg hand soap, chlorox, lysol disinfectant spray (under sink) (21)

shaving cream, bubbles (cabinets near sink)

glitter glue (cabinet behind summa/reading area) (22)



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:

Room 146

Date:

1/2/08

Sample ID: 045162 - Rm146

Sampling personnel: H. Ballantyne

Summa Canister ID: M127

Flow Regulator ID: MC068

Sample Type / Analysis Method: TO-15 Mod.

Sampling Start Time: ~~449~~ 447 am/pm

Sampling Finish Time: 835 am/pm

Did Summa Canister go to ambient pressure? Yes / No

Vacuum pressure reported by Laboratory: _____

Pressure gauge reading (Pre-opening): Flow Controller: 30 Separate gauge: _____

Pressure gauge reading (After sample collected): Flow Controller: 4 Separate gauge: _____

Environmental conditions (outside):

Temperature

Barometric Pressure (in Hg)

Prevailing wind direction:

General weather conditions

Before Sampling

~~45° F~~ 37° F

30.14

WNW

calm/fair

After Sampling

~~40° F~~ 33° F

30.26

W

calm/fair

Environmental conditions at sample location):

Temperature

Barometric Pressure

Before Sampling

60° F

30.14

After Sampling

60° F

30.26

PID readings at sample location (ppm)

0.0

0.0

Photographs taken before sampling? Yes / No If Yes, what time: 1645 Taken by: HAB

Photographs taken after sampling? Yes / No If Yes, what time: 2036 Taken by: HAB

Was the building aired out prior to sample collection? Yes / No If yes, how long? _____

Windows open? Yes (No) Ventilation fans? Yes / No

Was there significant precipitation within 12 hours of (or during) the sampling event? (Yes) No -rained yesterday

Were any of the residents home during sampling? (Yes) / No If yes, provide detail: custodians in nearby classroom + halls cleaning intermittently

Did any of the occupants NOT follow instruction for residents? Yes / No If yes, describe below

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Soap @ sink
1.1 gal cont. clorox glue (1/2 empty) 14
underneath sink. 1.1 gal washable paint, 1 can Oust, 3.2 fl. oz Fantastik, 3.2 fl. oz Windex
equally on spray disinfectant, 3.2 fl. oz chlorox sanitizing spray, 0.2 fl. oz Sun + Earth
citrus cleaner, 3.2 fl. oz Windex glass cleaner, Ajax 21oz, wet ones (15), 1 gal glue
1 canister isobutylene (16) - removed from room (10 ppm) req. connected
tempera paint (above cubbies) (17)

glue, shaving cream (above cubbies) (18)
dry erase fluid, disinfectant wipes, static guard behind teachers desk (19)

Capuano Air Sampling 1-2-07



045162-RM138 (beginning)



045162-RM138 (beginning)



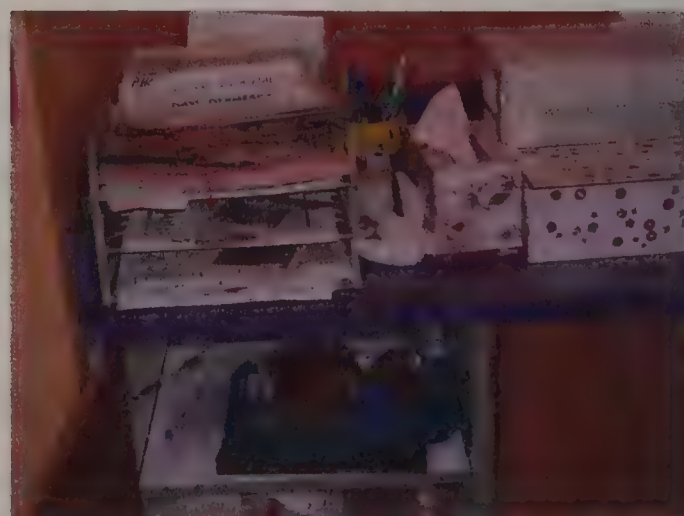
045162-RM138 (beginning)



045162-RM138 (end)



Room 138



Room 138



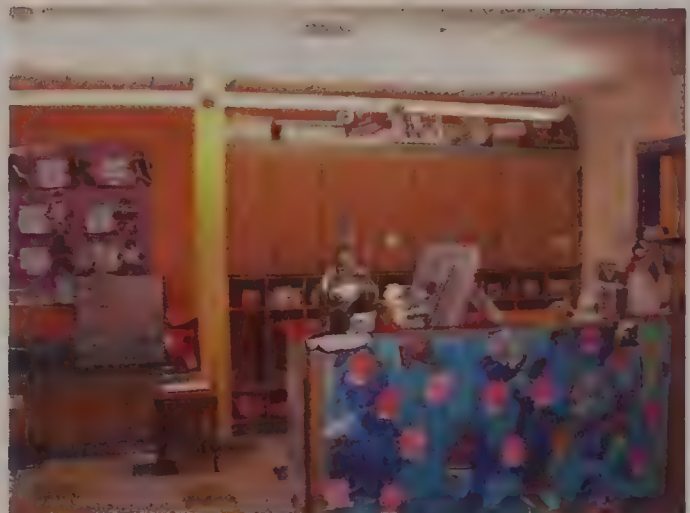
Room 138



Room 138



045162-RM142 (beginning)



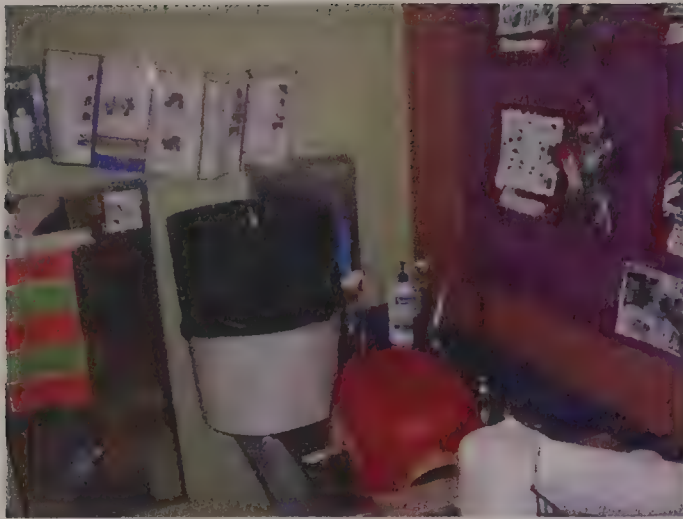
045162-RM142 (beginning)



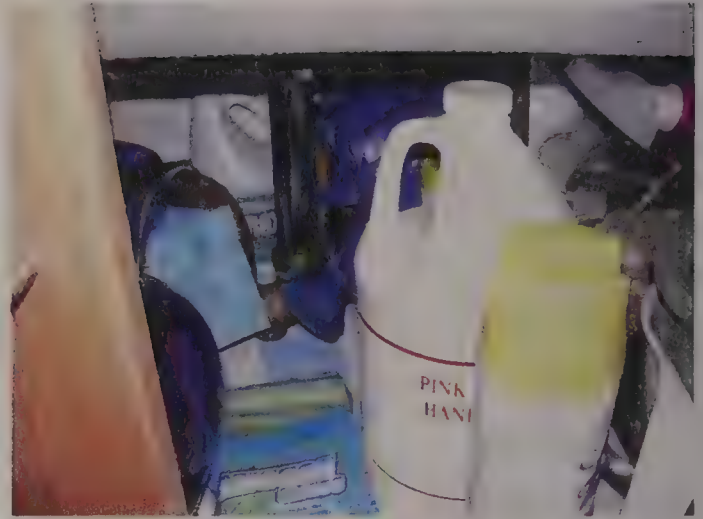
045162-RM142 (beginning)



045162-RM142 (end)



Room 142



Room 142



Room 142



Room 142



045162-RM146 (beginning)



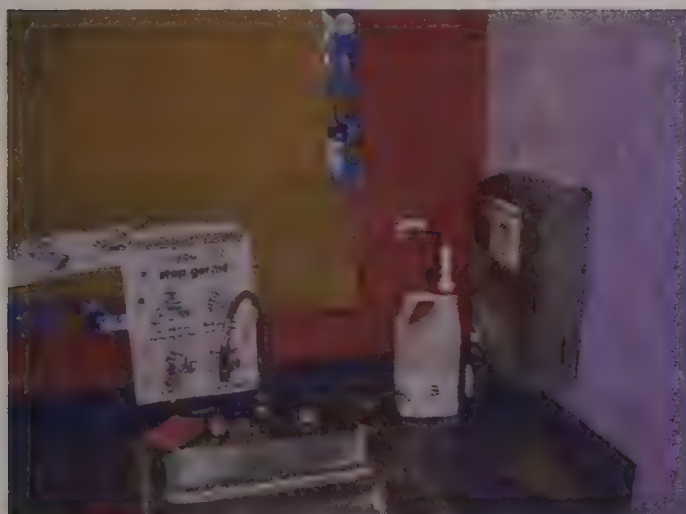
045162-RM146 (beginning)



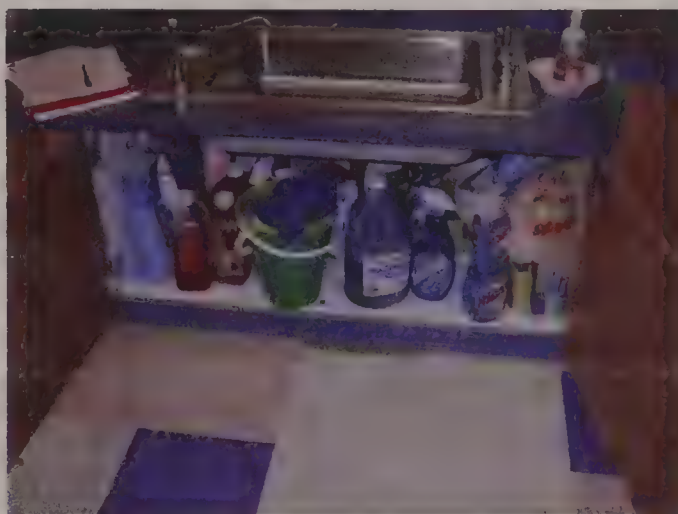
045162-RM146 (beginning)



045162-RM146 (end)



Room 146



Room 146



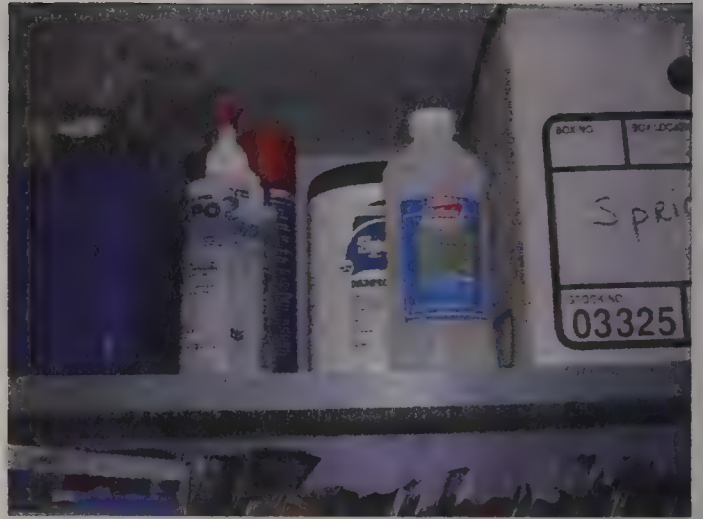
Room 146



Room 146



Room 146



Room 146



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 1/6/07

Sampling personnel: K. Wolfe

Summa Canister ID: M141

Flow Regulator ID: M0090

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0848

Sampling Finish Time: 1228

Sample ID: 0562-1562-CAF

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 29. In/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 3. In/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:
Barometric Pressure:
Prevailing Wind Direction:
General Weather Conditions:

Before Sampling

65.3
29.71
none
cloudy

After Sampling

67.8
29.65
none
mist

Environmental Conditions (At Sample Location):

Temperature:
Barometric Pressure:

Before Sampling

71.7
29.70

After Sampling

73.2
29.58

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0848 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air Intake at 3.7



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 1/6/07

Sampling personnel: K. Wolfe

Summa Canister ID: m157

Flow Regulator ID: mFC046

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0813

Sampling Finish Time: 1150

Sample ID: 04912-150410-
Room 121

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 28 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 4 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

65.3

29.71

none

cloudy

After Sampling

67.8

29.65

none

light drizzle
mist

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

73.7

29.72

After Sampling

74.1

29.99

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0813 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.3



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 1/6/07

Sampling personnel: K. Wolfe

Summa Canister ID: m136

Flow Regulator ID: mfc059

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0833

Sampling Finish Time: 1150

Sample ID: 045162 150640

Room 120

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 28 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 4 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

65.3

29.71

none

cloudy

After Sampling

67.8

29.65

none

mist

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

73.4

29.70

After Sampling

73.8

29.59

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0833 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.3



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 1/26/07

Sampling personnel: K. Wolfe

Summa Canister ID: M015

Flow Regulator ID: MFC 062

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0816

Sampling Finish Time: 1154

Sample ID: 045162-150402-

Room 137A

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 30 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 5 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

65.3

29.71

none
cloudy

After Sampling

67.8

29.65

none
mist

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

73.4

29.72

After Sampling

73.9

29.60

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0816 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.2



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-150620-
Room 137B

Date: 1/7/06

Sampling personnel: K. Wolfe

Summa Canister ID: M155

Flow Regulator ID: MFC043

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0817

Sampling Finish Time: 0922

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 29 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 2 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

65.3

29.71

none

clear

After Sampling

67.8

29.7265

none

mist

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

73.4

29.72

After Sampling

73.4

29.72

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0814 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.2

only took ~1 hour?
regulator?



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162 - RIF1610
Room 138

Date: 1/6/07

Sampling personnel: K. Wolfe

Summa Canister ID: m601

Flow Regulator ID: MFC058

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0833

Sampling Finish Time: 1215

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 28.5 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 3 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

65.3

29.71

none

cloudy

After Sampling

67.8

29.65

none

mist

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

73.9

29.70

After Sampling

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0833 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air Intake at 3.3



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 1/6/07

Sampling personnel: K. Wolfe

Summa Canister ID: MC36

Flow Regulator ID: MC048

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0822

Sampling Finish Time: 1230

Sample ID: 045162-15068 on -
Room 1411

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 30 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 6.5 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:
Barometric Pressure:
Prevailing Wind Direction:
General Weather Conditions:

Before Sampling

65.3
29.71
none
cloudy

After Sampling

67.8
29.65
none
mist

Environmental Conditions (At Sample Location):

Temperature:
Barometric Pressure:

Before Sampling

73.9
29.71

After Sampling

73.9
29.60

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0822 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.3



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 1146162-150421

Room 143

Date: 1/6/08

Sampling personnel: K. Wolfe

Summa Canister ID: m007

Flow Regulator ID: m0067

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0809

Sampling Finish Time: 1144

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 32 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 6 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:
Barometric Pressure:
Prevailing Wind Direction:
General Weather Conditions:

Before Sampling

65.3
29.71
none
clear

After Sampling

67.8
29.65
none
light drizzle
mist

Environmental Conditions (At Sample Location):

Temperature:
Barometric Pressure:

Before Sampling

73.4
29.71

After Sampling

73.5
29.59

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0809 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.3'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 1/6/07

Sampling personnel: K. Wolfe

Summa Canister ID: m014

Flow Regulator ID: m0069

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0829

Sampling Finish Time: 1203

Sample ID: 045162 - Field -
Room 145

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 31 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 5 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

65.3

29.71

none

cloudy

After Sampling

67.8

29.65

none

mist

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

73.6

29.70

After Sampling

73.0

29.60

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0829 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.3



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 1/6/07

Sampling personnel: K. Wolfe

Summa Canister ID: m096

Flow Regulator ID: m0698

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0843

Sampling Finish Time: 1213

Sample ID: 045162-1506207 -

Room 146

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 2nd in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 5 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

65.3

29.71

none

cloudy

After Sampling

67.8

29.65

none

mist

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

76.4

29.70

After Sampling

76.7

29.59

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0843 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans?

Was there significant precipitation within 12 hours of (or during) the sampling event?

Were any of the residents home during sampling? If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 3.5



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 1/6/07

Sampling personnel: K. Wolfe

Summa Canister ID: M159

Flow Regulator ID: MC064

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0736

Sampling Finish Time: 1120

Sample ID: 045162-1506ten-
0-1A

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 0.7 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 3 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Before Sampling

65.3

29.71

none

cloudy

After Sampling

67.8

29.65

none

light drizzle mist

Environmental Conditions (At Sample Location):

Temperature:

Barometric Pressure:

Before Sampling

65.3

29.71

After Sampling

67.8

29.65

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0736 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? NA

Windows open? Ventilation fans? NA

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: NA

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 35'

Fence



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 1/6/07

Sampling personnel: K. Wolfe

Summa Canister ID: m017

Flow Regulator ID: m FC049

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 0748

Sampling Finish Time: 1124

Sample ID: 045162-150607 -

0-2A

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 30.5 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 5 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Temperature:
Barometric Pressure:
Prevailing Wind Direction:
General Weather Conditions:

Before Sampling

65.3
29.71
none
cloudy

After Sampling

67.8
29.65
none
~~high chiller~~
mist

Environmental Conditions (At Sample Location):

Temperature:
Barometric Pressure:

Before Sampling

65.3
29.71

After Sampling

67.8
29.65

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 0748 Taken by: KAW

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? NA

Windows open? Ventilation fans? NA

Was there significant precipitation within 12 hours of (or during) the sampling event? No

Were any of the residents home during sampling? If yes, provide detail: NA

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at 4.4

Tall

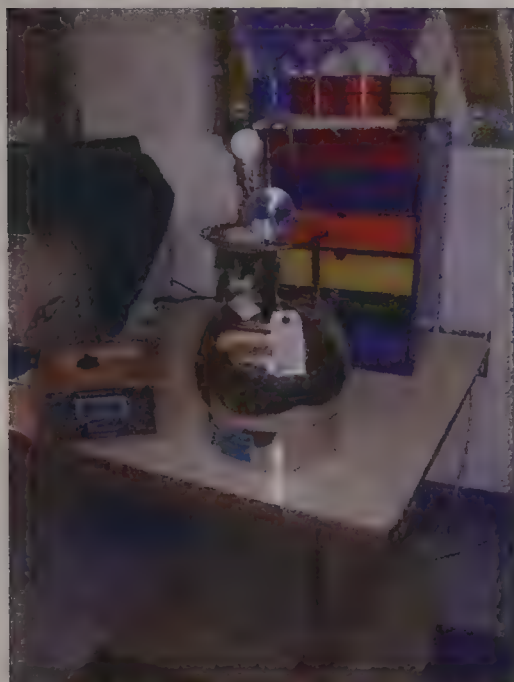
Capuano Air Sampling 1-6-07



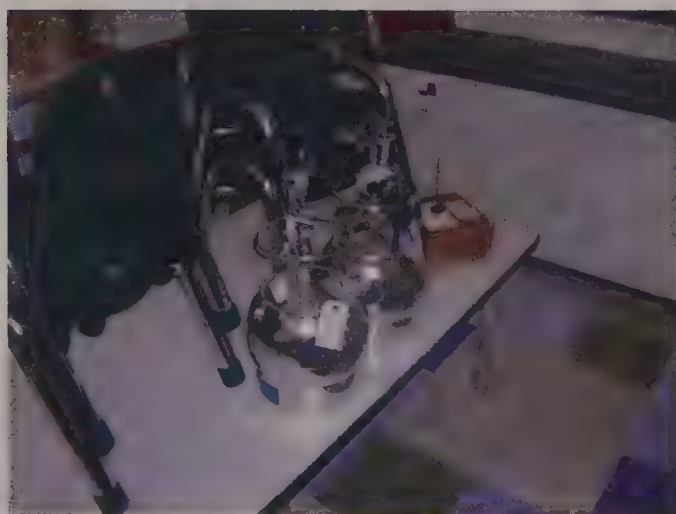
045162-150Glen-Caf



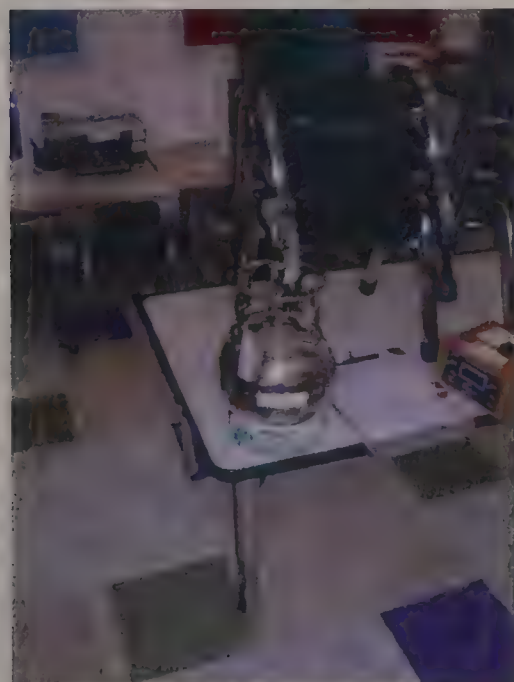
045162-150Glen-Room121



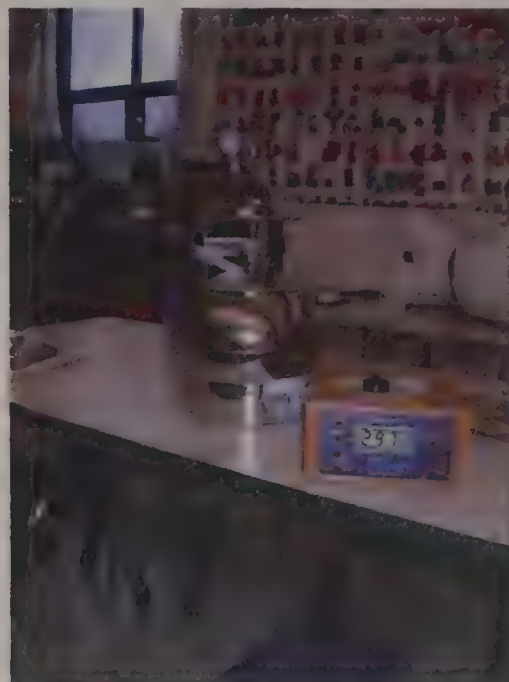
045162-150Glen-Room122



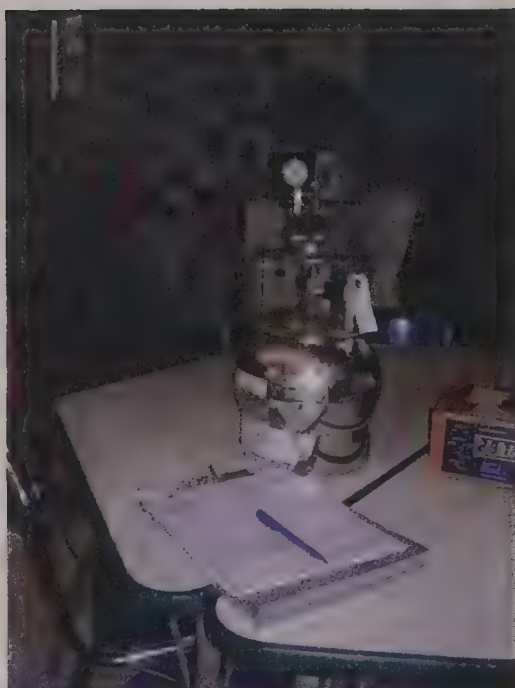
045162-150Glen-Room137A&B



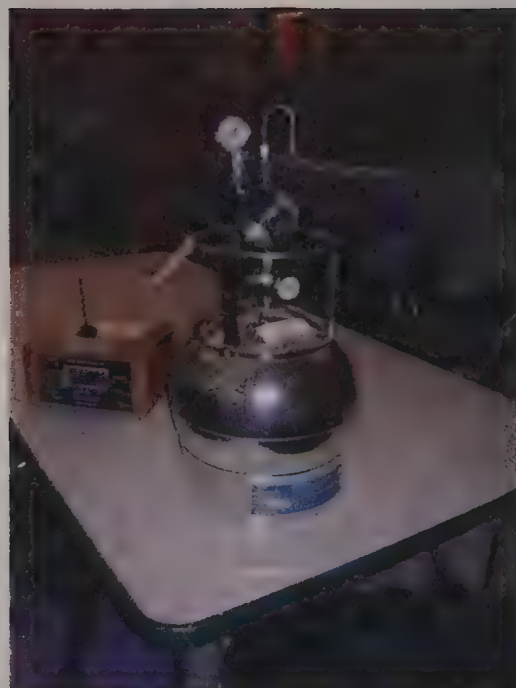
045162-150Glen-Room138



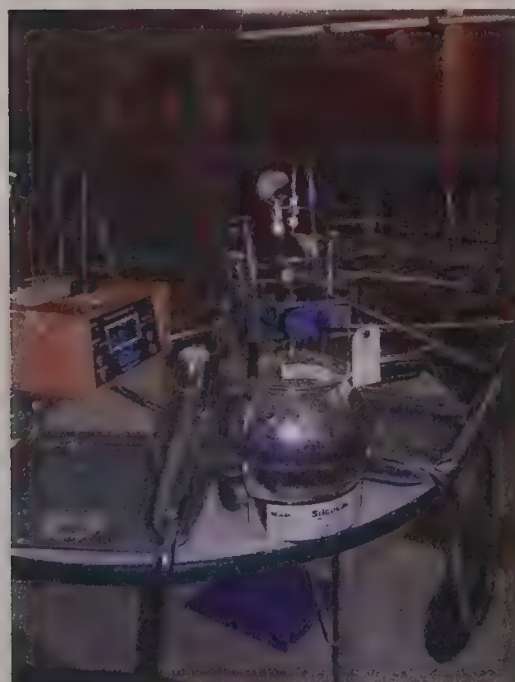
045162-150Glen-Room141



045162-150Glen-Room142



045162-150Glen-Room145



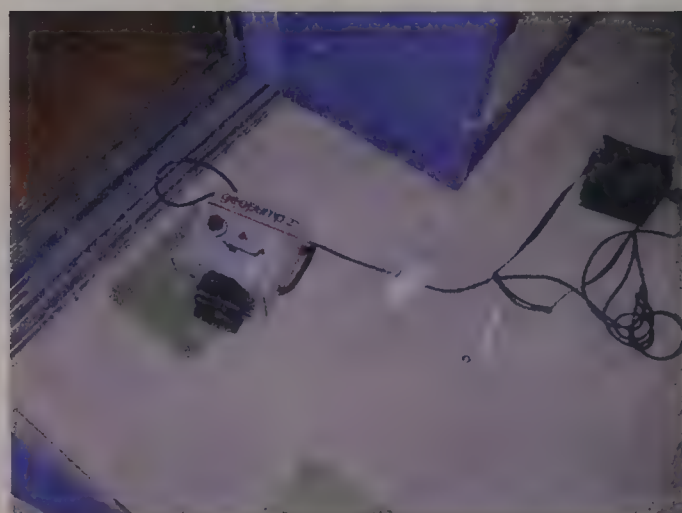
045162-150Glen-Room146



045162-150Glen-O-1A



045162-150Glen-O-2A



Gas Chromatogram Elevator Pit



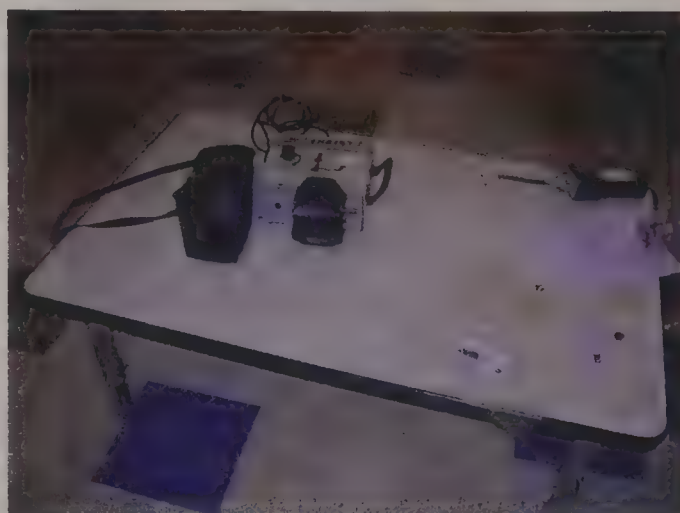
Gas Chromatogram Kitchen Drain



Gas Chromatogram Room 121



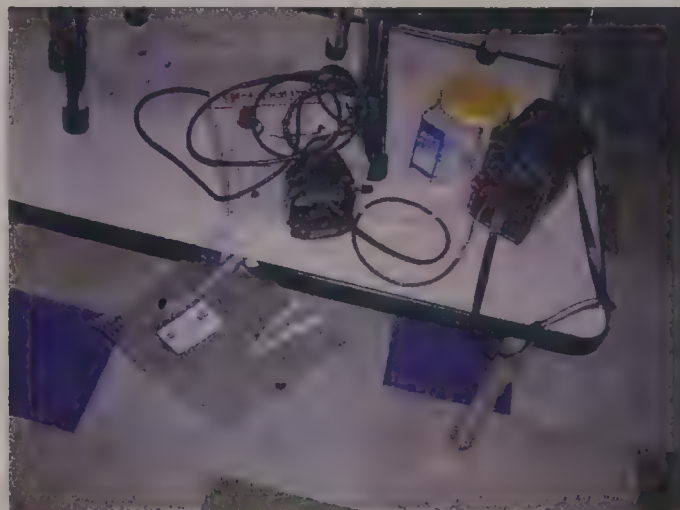
Gas Chromatogram Room 127 Wet Wall



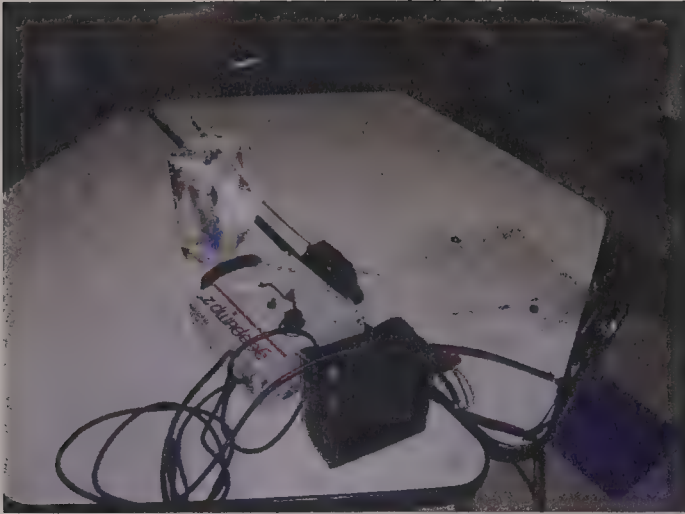
Gas Chromatogram Room 133



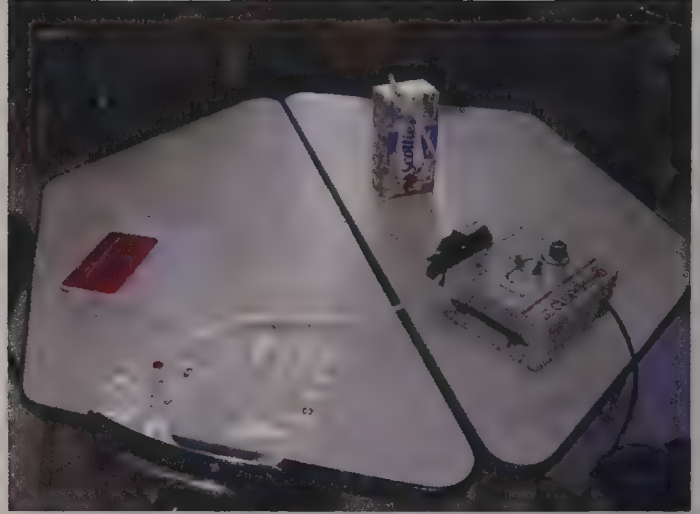
Gas Chromatogram Room 134



Gas Chromatogram Room 138



Gas Chromatogram Room 142 (before)



Gas Chromatogram Room 142 (after)



Gas Chromatogram Room 145A Wet Wall



Gas Chromatogram Room 146



Gas Chromatogram Room 146A Wet Wall



Soccer Field



Soccer Field



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:

Room 126

Date: 11/13/07

Sample ID: 150 GLEN - ROOM 126

Sampling personnel: H. Ballantyne

(DUP) 150 GLEN - ROOM 150

Summa Canister ID: M086/M115

Flow Regulator ID: MC070/MC072

Sample Type / Analysis Method: TO15

Sampling Start Time: 9:15/9:15 am pm

Sampling Finish Time: 12:47/12:57 am pm

Did Summa Canister go to ambient pressure? Yes / ☒ No

Vacuum pressure reported by Laboratory: _____

Pressure gauge reading (Pre-opening): Flow Controller: 29.5/30 Separate gauge: _____
Sampling

Pressure gauge reading (After sample collected): Flow Controller: _____ Separate gauge: _____

Environmental conditions (outside):

Temperature

Barometric Pressure

Prevailing wind direction:

General weather conditions

Before Sampling

After Sampling

41.75 78.9 36.0 50.0

51 29.5 48.0 45.5

30.01 30.01

West

overcast, drizzle

Environmental conditions at sample location):

Temperature

Barometric Pressure

Before Sampling

After Sampling

71.9 71.9

71.5 71.5

0.004 in H₂O0.004 in H₂O

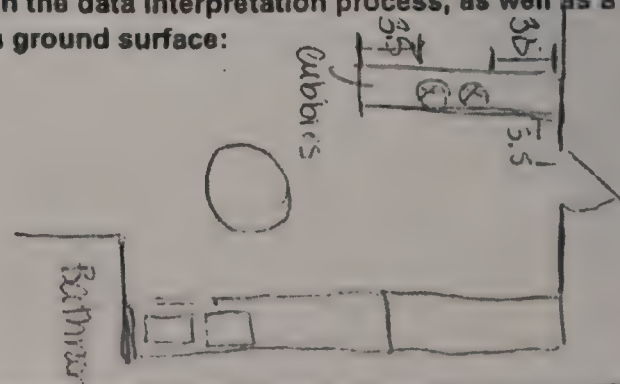
PID readings at sample location (ppm)

0.0 ppm

0.0

Photographs taken before sampling? ☒ Yes / ☐ No If Yes, what time: 9:15 Taken by: HABPhotographs taken after sampling? ☒ Yes / ☐ No If Yes, what time: 12:57/12:47 Taken by: HABWas the building aired out prior to sample collection? Yes / ☒ No If yes, how long? 2Windows open? Yes / ☒ No Ventilation fans? ☒ Yes / ☐ NoWas there significant precipitation within 12 hours of (or during) the sampling event? ☒ Yes / ☐ No showers todayWere any of the residents home during sampling? Yes / ☒ No If yes, provide detail: EHE on-siteDid any of the occupants NOT follow instruction for residents? Yes / ☐ No If yes, describe below

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Photo # 31 - pre-sampling
air intake @ 4'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:

Room 134

Date: 1/13/07

Sample ID: 1506 LEN - Room 134

Sampling personnel: H. Ballantyne

Summa Canister ID: M058

Flow Regulator ID: MC097

Sample Type / Analysis Method: T0-15

Sampling Start Time: 917 am / pm

Sampling Finish Time: 1300 am / pm

Did Summa Canister go to ambient pressure? Yes / No

Vacuum pressure reported by Laboratory: _____

Pressure gauge reading (Pre-opening): Flow Controller: 29.5 Separate gauge: _____

Pressure gauge reading (After sample collected): Flow Controller: 4 Separate gauge: _____

Environmental conditions (outside):

Temperature

Barometric Pressure

Prevailing wind direction:

General weather conditions

Before Sampling

46.75 50.7°F

After Sampling

51~45.9°F 45.5
30.24 mm 3/10/07

Environmental conditions at sample location):

Temperature

Barometric Pressure

Before Sampling

55 70.7°F
0.002 in H₂O

After Sampling

71.8°F
0.004 in H₂O

PID readings at sample location (ppm)

0.0 ppm

0.0

Photographs taken before sampling? Yes / No If Yes, what time: 911 Taken by: HAB

Photographs taken after sampling? Yes / No If Yes, what time: 1301 Taken by: HAB

Was the building aired out prior to sample collection? Yes / No If yes, how long? _____

Windows open? Yes / No Ventilation fans? Yes / No

Was there significant precipitation within 12 hours of (or during) the sampling event? Yes / No Showers today

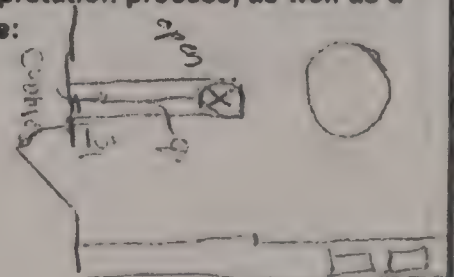
Were any of the residents home during sampling? Yes / No If yes, provide detail: EHE in and out, checking pressure readings

Did any of the occupants NOT follow instruction for residents? Yes / No If yes, describe below

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Photo 29

Air intake @ 41





AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:

Room 136

Date: 11/3/07

Sample ID: 1506LEN-ROOM136

Sampling personnel: H. Ballantyne

Summa Canister ID: M162

Flow Regulator ID: MC092

Sample Type / Analysis Method:

Sampling Start Time: 917 am/pm

Sampling Finish Time: 1219 am/pm

Did Summa Canister go to ambient pressure? Yes / ☒ No

Vacuum pressure reported by Laboratory: _____

Pressure gauge reading (Pre-opening): Flow Controller: 26 Separate gauge: _____

Pressure gauge reading (After sample collected): Flow Controller: 4 Separate gauge: _____

Environmental conditions (outside):

Temperature

Barometric Pressure

Prevailing wind direction:

General weather conditions

Before Sampling

50°F 917

36.02

After Sampling

46°F 50°F 45°F

36.04 11/3/07

Environmental conditions at sample location):

Temperature

Barometric Pressure

Before Sampling

65°F (thermostat)

After Sampling

65°F (thermostat) (felt warmer though)

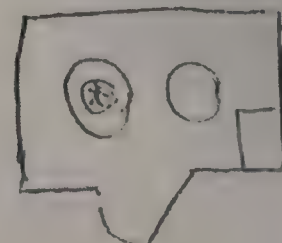
PID readings at sample location (ppm)

0.0

0.0

Photographs taken before sampling? ☒ Yes / ☐ No If Yes, what time: 909 Taken by: HABPhotographs taken after sampling? ☒ Yes / ☐ No If Yes, what time: 1221 Taken by: HABWas the building aired out prior to sample collection? Yes / ☒ No If yes, how long? _____Windows open? Yes / ☒ No Ventilation fans? ☒ Yes / ☐ NoWas there significant precipitation within 12 hours of (or during) the sampling event? ☒ Yes / ☐ No showers/driizzle todayWere any of the residents home during sampling? Yes / ☒ No If yes, provide detail: EHE in & out of rooms sampling pressureDid any of the occupants NOT follow instruction for residents? Yes / ☐ No If yes, describe below

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

-photo #28 (pre-sampling) photo #46
air intake @ ~3'

GEI



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:

ROOM 138

Date: 1/13/07

Sampling personnel: H. Ballantyne

Summa Canister ID: M0391M151

Flow Regulator ID: MC095/MC072

Sample Type / Analysis Method: T0-15

Sampling Start Time: 9:18 am/pm

Sampling Finish Time: 1247 am/pm

Did Summa Canister go to ambient pressure? Yes / No

Vacuum pressure reported by Laboratory:

Pressure gauge reading (Pre-opening): Flow Controller: 29/29.5 Separate gauge:

Pressure gauge reading (After sample collected): Flow Controller: 4/5 Separate gauge:

Environmental conditions (outside):

Temperature

Barometric Pressure

Prevailing wind direction:

General weather conditions

Before Sampling

41.75

After Sampling

45 51

29.0 45.5

30.0 4/5 3/10/07

Environmental conditions at sample location):

Temperature

Barometric Pressure

Before Sampling

60.9

0.004 in Hg

After Sampling

71.0

0.004 in Hg

PID readings at sample location (ppm)

Photographs taken before sampling? Yes/No

If Yes, what time:

907

Taken by: HAB

Photographs taken after sampling? Yes/No

If Yes, what time:

1247

Taken by: HAB

Was the building aired out prior to sample collection? Yes/No If yes, how long?

Windows open? Yes/No Ventilation fans? Yes/No

Was there significant precipitation within 12 hours of (or during) the sampling event? Yes/No showers/drizzle today

Were any of the residents home during sampling? Yes/No If yes, provide detail: EHE in/out pressure readings

Did any of the occupants NOT follow instruction for residents? Yes/No If yes, describe below

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Photo # 27

Air Intake @ 4'





AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:

Room 144

Date: 11/3/07

Sample ID: 150 GLEN-Room 144

Sampling personnel: H. Ballantyne

Summa Canister ID: M042

Flow Regulator ID: M0093

Sample Type / Analysis Method: T0-15

Sampling Start Time: 920 am / pm

Sampling Finish Time: 1138 am / pm

Did Summa Canister go to ambient pressure? Yes / ☒ No

Vacuum pressure reported by Laboratory: _____

Pressure gauge reading (Pre-opening): Flow Controller: 28.5 Separate gauge: _____

Pressure gauge reading (After sample collected): Flow Controller: 4 Separate gauge: _____

Environmental conditions (outside):

Temperature

Barometric Pressure

Prevailing wind direction:

General weather conditions

Before Sampling

50-55°F 1175

50.0

After Sampling

~45-50°F 51°F 1180
30.0 0/13 9/12/2

Environmental conditions at sample location):

Temperature

Barometric Pressure

Before Sampling

78°F (thermostat)

After Sampling

78° (thermostat)

PID readings at sample location (ppm)

0.0 ppm

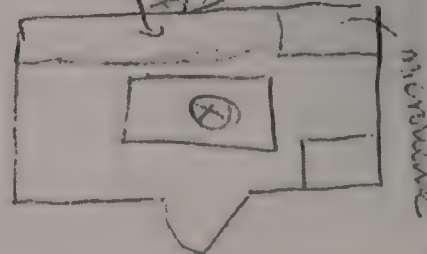
0.0

Photographs taken before sampling? ☒ Yes / ☐ No If Yes, what time: 913 Taken by: HARBPhotographs taken after sampling? Yes / ☒ No If Yes, what time: _____ Taken by: _____Was the building aired out prior to sample collection? Yes / ☒ No If yes, how long? _____Windows open? Yes / ☒ No Ventilation fans? ☒ Yes / ☐ NoWas there significant precipitation within 12 hours of (or during) the sampling event? ☒ Yes / ☐ No showers / drizzle todayWere any of the residents home during sampling? Yes / ☒ No If yes, provide detail: EHE in & out classrooms
sampling pressure diffDid any of the occupants NOT follow instruction for residents? Yes / ☐ No If yes, describe below

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

- photo # 30

- Air Intake @ 3.5'



Capuano Air Sampling 1-13-07



045162-150Glen-Room126&100 (beginning)



045162-150Glen-Room126&100 (end)



045162-150Glen-Room134 (beginning)



045162-150Glen-Room134 (end)



045162-150Glen-Room136 (beginning)



045162-150Glen-Room136 (end)



045162-150Glen-Room138 (beginning)



045162-150Glen-Room138 (end)



045162-150Glen-Room144 (beginning)



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 1506417-Rm 12.6

Date: 2/7/07

Sampling personnel: H. Ballantyne

Summa Canister ID: M141

Flow Regulator ID: MC015

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1520

Sampling Finish Time: 1914

During Sampling	
Time	Vacuum
1520	30
1612	25
1705	19
1825	10
1914	4

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 30 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 4 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

~65°F 15

29.77

West

clear, cold

After Sampling

~60°F 11/12/07

29.77

West

clear, cold

Environmental Conditions (At Sample Location):

Before Sampling

Temperature:

Barometric Pressure:

~65°F (<55°F - thermostat)

After Sampling

~60°F (thermostat <55°F)

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: Taken by: KAW HARB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans? Fan on

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: NA (No students or teachers)

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~3'

picture 1



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 15061en- Rm 122

Date: 2/7/07

Sampling personnel: H. Ballantyne

Summa Canister ID: M134

Flow Regulator ID: MC086

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1519

Sampling Finish Time: 1911

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

During Sampling	
Time	Vacuum
1519	30
1611	25
1705	18.5
1826	9
1911	3.5

Pressure gauge reading (Pre-^{sampling} opening): Flow Controller: 30 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 35 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

13

11.6

Barometric Pressure:

29.79

29.71

Prevailing Wind Direction:

west

west

General Weather Conditions:

cold, clear

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

~65 (80° thermostat)

~65°F (thermostat 80°F)

Barometric Pressure:

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: Taken by: KAW- HAPB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans? ON

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: NO

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~2.5' ~3'.

Photo 2



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 15061en - Rm 134

Date: 2/7/07

Sampling personnel: H. Ballantyne

Summa Canister ID: M038

Flow Regulator ID: M018

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1526

Sampling Finish Time: 1930

During Sampling	
Time	Vacuum
1526	29
1614	25
1706	19
1826	10.5
1930	4

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 29 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

18

19

Barometric Pressure:

24.79

24.71 7/12/07

Prevailing Wind Direction:

west

west

General Weather Conditions:

cold clear

cold, clear

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

~65°F (<55°F thermostat)

~60°F (thermostat <55°F)

Barometric Pressure:

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: Taken by: KAW HAB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long?

Windows open? Ventilation fans? → ON

Was there significant precipitation within 12 hours of (or during) the sampling event? No

Were any of the residents home during sampling? If yes, provide detail: NA (no students or teachers)

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~3'.

Photo 3



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date: 2/7/07
Sampling personnel: H. Ballantyne
Summa Canister ID: M015/M095
Flow Regulator ID: M0016/M0070
Sample Type / Analysis Method: TO15/Summa
Sampling Start Time: 1531
Sampling Finish Time: 1925

Sample ID: 150Clen - Rim 138

Field dupe - 150Clen - Rim 139

During Sampling

Time	Vacuum
1531	30/29.5
1615	25.5/25
1707	20/19.5
1827	10.5/10
1925	4/3.5

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

30/29.5

Pressure gauge reading (Pre-opening): Flow Controller: in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 4/3.5 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature: 12

19.6

Barometric Pressure: 29.79

29.71

Prevailing Wind Direction: WSW

WSE

General Weather Conditions: clear, cold

clear, cold

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature: ~65°F (60°F thermostat)

~60°F (thermostat 50°F)

Barometric Pressure:

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: Taken by: KAW HKB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? NO

Windows open? Ventilation fans? ON

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: NA (no students or teachers)

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~3'

photo 4



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Date:

2/7/07

Sampling personnel: H. Ballantyne

Summa Canister ID: M074

Flow Regulator ID: MFC060

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1527

Sampling Finish Time: 1920

Sample ID: 150 Glen - Rm 142

During Sampling

Time	Vacuum
1527	27
1617	23.5
1707	12
1828	9
1920	3

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 27 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 3 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

52
29.77
west
cold, clear

19.6
29.71 d/p 3/12/07
west
cold, clear

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

Barometric Pressure:

-65°F (<55°F thermostat)

~60°F (thermostat <55°F)

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: Taken by: KAW HAB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? NO

Windows open? Ventilation fans? 50N

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: NA (no students or teachers)

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~3'

photo 5



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 150 Glen-Rm 146

Date: 2/7/07

Sampling personnel: H. Ballantyne

Summa Canister ID: M155

Flow Regulator ID: MC084

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1522

Sampling Finish Time: 1928

During Sampling	
Time	Vacuum
1522	29
1618	23.5
1708	18.5
1829	10
1928	1

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 29 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 4 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

13

11.1

Barometric Pressure:

29.701

29.701

Prevailing Wind Direction:

General Weather Conditions:

cold, clear

cold, clear

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

26.5°F (26.0°F thermostat)

26.0°F (thermostat ~ 60°F)

Barometric Pressure:

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: Taken by: KAW HAB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? If yes, how long? NO

Windows open? Ventilation fans? ON

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: NA (no students or teachers present)

Did any of the occupants NOT follow instruction for residents? If yes, describe below: NA

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~3'.

photo 6

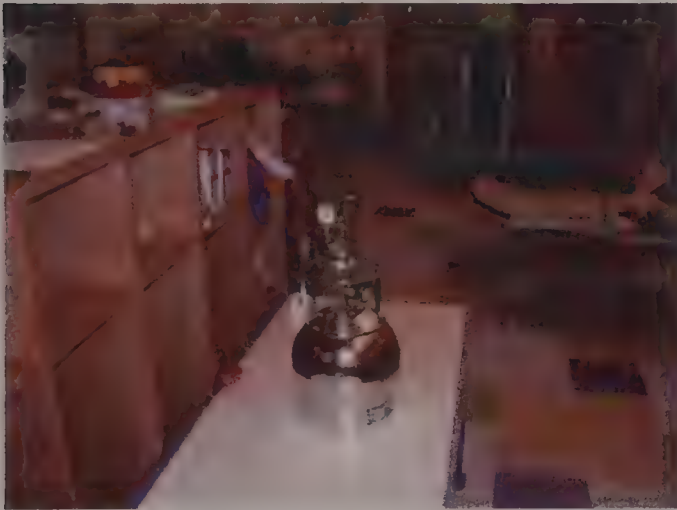
Capuano Air Sampling 2-7-07



045162-150Glen-Rm126



045162-150Glen-Rm122



045162-150Glen-Rm134



045162-150Glen-Rm138 and Rm139



045162-150Glen-Rm142



045162-150Glen-Rm146

Capuano Soil Gas and Air Sampling 2-8-07



045162-150Glen-137A



045162-150Glen-142A



045162-150Glen-146A



045162-150Glen-Effluent



045162-150Glen-Roof&RoofB



045162-150Glen-Roof&RoofB & Pipe



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-150 Glen - Row 1126

Date: 3/8/07

Sampling personnel: K. Wolfe, H. Ballantyne, S. Slater

Summa Canister ID: M003

Flow Regulator ID: M0091

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1632

Sampling Finish Time: 2031

During Sampling	
Time	Vacuum
1715	25
1822	17.5

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 30 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 3 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

48.4 42.1

11

Barometric Pressure:

30.4 30.14

30.36

Prevailing Wind Direction:

west

west

General Weather Conditions:

very cold, clear

very cold, clear

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

~68

~68

Barometric Pressure:

PID readings at sample location (ppm) ppb

0

0

Photographs taken before sampling? Yes If Yes, what time: 1632 Taken by: KAW/MA3

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? No If yes, how long?

Windows open? No Ventilation fans? No Yes

Was there significant precipitation within 12 hours of (or during) the sampling event? No

Were any of the residents home during sampling? If yes, provide detail: janitors, kids playing BMD in courtyard

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~4' aqs.



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045142-150 Glen- Room 138

Date: 3/8/07

Sampling personnel: K. Wolfe, H. Ballantyne, S. Slater

Summa Canister ID: M031

Flow Regulator ID: MCO98

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1637

Sampling Finish Time: 2032

During Sampling	
Time	Vacuum
1723	25
1822	17

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 30 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 4 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

~~28.4~~ 21

12

Barometric Pressure:

30.14

30.36

Prevailing Wind Direction:

west

west

General Weather Conditions:

very cold, clear

very cold, clear

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

~68

~68

Barometric Pressure:

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 1637 Taken by: KAW HAB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? No If yes, how long?

Windows open? No Ventilation fans? No Yes

Was there significant precipitation within 12 hours of (or during) the sampling event? No

Were any of the residents home during sampling? If yes, provide detail: Juniors, Kids playing BINGO in

Did any of the occupants NOT follow instruction for residents? If yes, describe below: Cafeteria

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~4'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-150 Glen - Room 139

Date: 3/8/07

Sampling personnel: K. Wolfe, H. Bullantyne, S. Slater

Summa Canister ID: M122

Flow Regulator ID: MC097

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1637

Sampling Finish Time: 2032

During Sampling	
Time	Vacuum
1723	25
1822	17

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 29.5 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 4 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

28.4 21

12

Barometric Pressure:

30.14

30.36

Prevailing Wind Direction:

West

West

General Weather Conditions:

very cold, clear

very cold, clear

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

~68

~68

Barometric Pressure:

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 1637 Taken by: KAW HAB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? No If yes, how long?

Windows open? No Ventilation fans? Yes

Was there significant precipitation within 12 hours of (or during) the sampling event? No

Were any of the residents home during sampling? If yes, provide detail: janitors, kids playing BINGO

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~4'

Field duplicate of 045162-150 Glen - Room 138.



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-150611 - Room 141

Date: 3/8/07

Sampling personnel: K. Wolfe H. Ballantyne, S. Slater

Summa Canister ID: M099

Flow Regulator ID: M0412

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1440

Sampling Finish Time: 2033

During Sampling	
Time	Vacuum
1725	24
1824	17

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 28.5 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 3 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

28.4 21

18

Barometric Pressure:

30.14

30.36

Prevailing Wind Direction:

west

west

General Weather Conditions:

very cold, clear

very cold, clear

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

~68

~68

Barometric Pressure:

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 1040 Taken by: KAW HAB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? No If yes, how long?

Windows open? No Ventilation fans? Yes

Was there significant precipitation within 12 hours of (or during) the sampling event? No

Were any of the residents home during sampling? If yes, provide detail: janitors, kids playing BINGO.

Did any of the occupants NOT follow instruction for residents? If yes, describe below:

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~3.5'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-150667-Run 142

Date: 3/8/07

Sampling personnel: R. Wolfe, H. Ballantyne, S. Slater

Summa Canister ID: M075

Flow Regulator ID: AC013

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: ~~1041~~ 1041 ⁶⁵

Sampling Finish Time: 2054

During Sampling	
Time	Vacuum
1724	26
1824	20
2034	6

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 30 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 5 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

~~20~~ 21

12

Barometric Pressure:

30.14

30.36

Prevailing Wind Direction:

west

west

General Weather Conditions:

very cool, clear

very cold, clear

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

~68

~68

Barometric Pressure:

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 1041 Taken by: KAW HAB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? NO If yes, how long?

Windows open? NO Ventilation fans? YES

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: janitors cleaning, kids playing

Did any of the occupants NOT follow instruction for residents? If yes, describe below: BINGO in Cafeteria.

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~ 5'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162 150 Glen - Rowin 146

Date: 3/8/07

Sampling personnel: ~~K. Wolfe~~ H. Ballantyne, S. Slater

Summa Canister ID: M121

Flow Regulator ID: M1013

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1642

Sampling Finish Time: 2052

During Sampling	
Time	Vacuum
1725	27
1825	20

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 30 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 3 in/hr Separate gauge: ---

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

~~21~~ 21

12

Barometric Pressure:

30.11 30.14

30.36

Prevailing Wind Direction:

west

west

General Weather Conditions:

very cold, clear

very cold, clear

Environmental Conditions (At Sample Location):

Before Sampling

After Sampling

Temperature:

Barometric Pressure:

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? Yes If Yes, what time: 1642 Taken by: KAW HAB

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? NO If yes, how long?

Windows open? NO Ventilation fans? YES

Was there significant precipitation within 12 hours of (or during) the sampling event? NO

Were any of the residents home during sampling? If yes, provide detail: janitor's cleaning, kids playing B/N 670

Did any of the occupants NOT follow instruction for residents? If yes, describe below: in Cafeteria.

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~4'



AMBIENT AIR SAMPLING CHECKLIST

Sampling Location:
Tufts Street

Sample ID: 045162-150 Glen - Roof

Date: 3/8/07

Sampling personnel: K. Wolfe, H. Ballantyne, S. Slater

Summa Canister ID: M066

Flow Regulator ID: MCO90

Sample Type / Analysis Method: TO15/Summa

Sampling Start Time: 1607

Sampling Finish Time: 1947

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? No

Vacuum pressure reported by Laboratory: ---

Pressure gauge reading (Pre-opening): Flow Controller: 4.6 in/hr Separate gauge: ---

Pressure gauge reading (After sample collected): Flow Controller: 5 in/hr Separate gauge: ---

Environmental Conditions (Outside):

	Before Sampling	After Sampling
Temperature:	28 21	12
Barometric Pressure:	30.14	30.36
Prevailing Wind Direction:	west	west
General Weather Conditions:	very cold, clear	very cold, clear

Environmental Conditions (At Sample Location):

	Before Sampling	After Sampling
Temperature:	28	28
Barometric Pressure:		

PID readings at sample location (ppm)

0

0

Photographs taken before sampling? ^{NO} Yes If Yes, what time: ~~1607~~ Taken by: KAW-~~1607~~

Photographs taken after sampling? No If Yes, what time: NA Taken by: NA

Was the building aired out prior to sample collection? ~~Yes~~ If yes, how long?

Windows open? ~~Yes~~ Ventilation fans? Yes - exhaust → outside

Was there significant precipitation within 12 hours of (or during) the sampling event? No

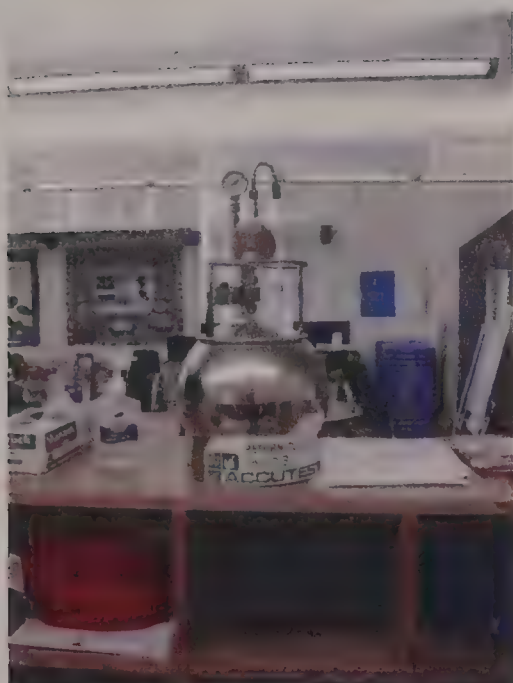
Were any of the residents home during sampling? If yes, provide detail: Janitors working, Kids Bingo in

Did any of the occupants NOT follow instruction for residents? If yes, describe below: Cafeteria

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process, as well as a sketch of the sampling location and sample setup indicating height of air intake from ground surface:

Air intake at ~1' above roof level, downwind of exhaust stack.

Capuano Air Sampling 3-8-07



045162-150Glen-Room126



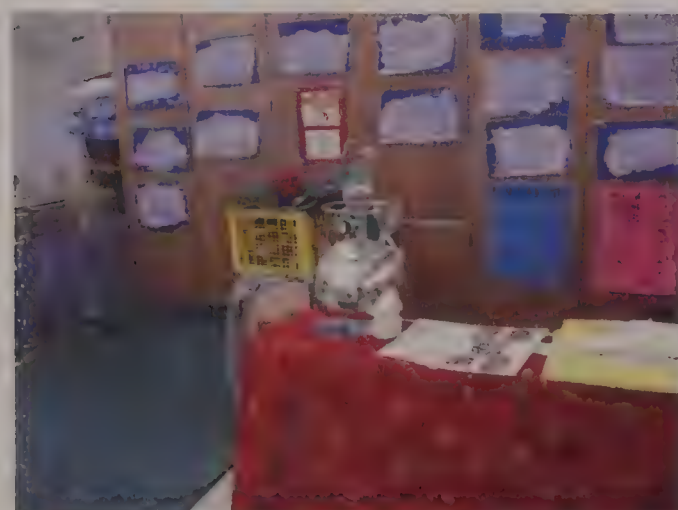
045162-150Glen-Room138&139



045162-150Glen-Room141



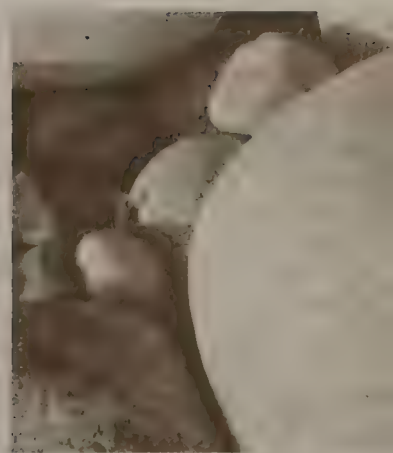
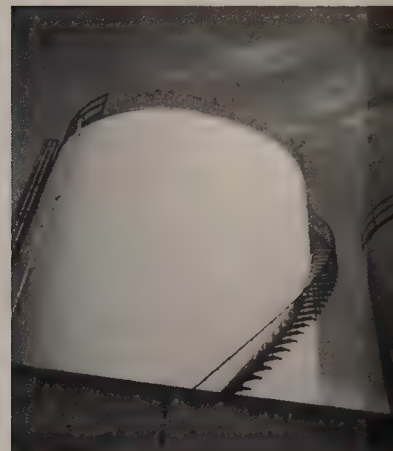
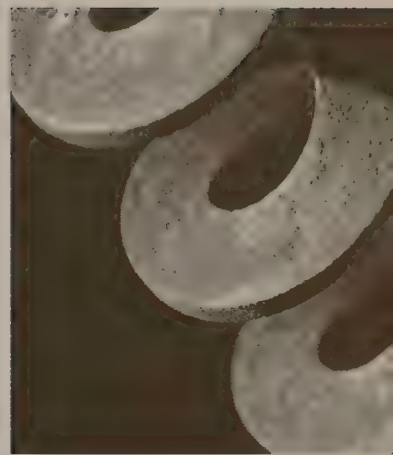
045162-150Glen-Room142



045162-150Glen-Room146



Geotechnical
Environmental and
Water Resources
Engineering



Appendix G

Capuano Center Field Monitoring Forms and Weekly Inspection Logs

GENERAL INFORMATION			
GEI Field Representatives:		Heather Ballantyne	
Date:		01/31/07	
Weather:		~35°F, sunny	
Start-time of monitoring work:		Exterior	
End-time of monitoring work:		Interior	
System Status:		15:00	
		17:00	
		19:20	
		OFF	

INSTRUMENTATION INFORMATION			
Instrument	Manufacturer	Model	Calibrant
PID (ppb)	IonSciences	5000+	NA
Manometer (in H ₂ O)	Dwyer	Mark III-475-1-FM	NA
			Zeroed before each reading

FIELD MEASUREMENTS

System Configuration

Blower Enclosure Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
122-1	-0.01	NM
122-2	-0.01	57,200
122-3	-0.03	NM
126-1	-0.02	NM
126-2	-0.02	91,900
126-3	-0.02	NM
134-1	-0.05	NM
134-2	-0.03	20,800
134-3	-0.02	NM
138-1	-0.02	437,000
138-2	-0.01	120,000
138-3	-0.02	181,000
142-1	-0.02	8,610
142-2	-0.01	12,600
142-3	-0.03	5,000
146-1	-0.02	23,100
146-2	-0.01	9,800
146-3	-0.01	118,000

Extraction Point Valve Identification	Status (on/off?)
122-1	OFF
122-2	OFF
122-3	OFF
126-1	OFF
126-2	OFF
126-3	OFF
134-1	OFF
134-2	OFF
134-3	OFF
138-1	OFF
138-2	OFF
138-3	OFF
142-1	OFF
142-2	OFF
142-3	OFF
146-1	OFF
146-2	OFF
146-3	OFF

	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Manifold 12 ¹	NM	NM
Manifold 13 ¹	NM	NM
Manifold 14 ¹	NM	NM
Combined Influent	NM	NM
Effluent	NM	NM

Effluent Flow

Manometer Reading (in H ₂ O)	Average Flow Rate (cfm)
NM	
NM	
NM	
NM	

Blower Condensation Cleanup?

NO

Interior Sub-Slab Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Room 122A	0.00	440
Room 126A	-0.01	641
Room 133A	0.00	469
Room 137A	0.00	800
Room 142A	-0.02	412
Room 146A	0.00	3,400

Interior Ambient Air Measurements

Classroom	PID Reading (ppb)
122	0
126	0
134	0
138	17
133	0
137	0
142	35
146	34

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
2. Blower enclosure lock combination is: 9906.
3. NA = Not Applicable.
4. NM = Not Measured.

GENERAL INFORMATION			
GEI Field Representatives:		Krista Wolfe	
		Larry Welch	
Date:	02/01/07	Start-time of monitoring work:	
Weather:	~30°F, sunny	End-time of monitoring work:	
		System Status:	
		ON	

INSTRUMENTATION INFORMATION				
Instrument	Manufacturer	Model	GEI Identification No.	Calibrant
PID (ppb)	Pro-Rae Systems	ppb-RAE	PINE	10 ppm Isobutylene
PID (ppm)	ThermoEnvironmental	580B	OVM (NH)	100 ppm Isobutylene
Manometer (in H ₂ O)	Dwyer	Mark III-475-1-FM	NA	NA
				Zeroed before each reading

Exterior Extraction Monitoring Points	FIELD MEASUREMENTS	Blower Enclosure Monitoring Points
	System Configuration	

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
122-1	NM	NM
122-2	-0.23	4,300
122-3	NM	NM
126-1	NM	NM
126-2	-0.20	3,100
126-3	NM	NM
134-1	NM	NM
134-2	-0.34	29,000
134-3	NM	NM
138-1	NM	NM
138-2	-0.37	97,000
138-3	NM	NM
142-1	NM	NM
142-2	-0.23	3,400
142-3	NM	NM
146-1	NM	NM
146-2	-0.19	3,700
146-3	NM	NM

Extraction Point Valve Identification	Status (on/off?)
122-1	ON
122-2	ON
122-3	ON
126-1	ON
126-2	ON
126-3	ON
134-1	ON
134-2	ON
134-3	ON
138-1	ON
138-2	ON
138-3	ON
142-1	ON
142-2	ON
142-3	ON
146-1	ON
146-2	ON
146-3	ON

	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Manifold 12 ¹	NM	NM
Manifold 13 ¹	NM	NM
Manifold 14 ¹	NM	NM
Combined Influent	NM	NM
Effluent	NM	NM

Effluent Flow

Manometer Reading (in H ₂ O)	Average Flow Rate (cfm)
NM	
NM	
NM	
NM	

Blower Condensation Cleanout?

NO

Interior Sub-Slab Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Room 122A	0.00	492,000
Room 126A	0.00	305,000
Room 133A	0.00	975,000
Room 137A	0.00	1,244,000
Room 142A	0.00	210
Room 146A	0.00	331,000

Interior Ambient Air Measurements

Classroom	PID Reading (ppb)
122	240
126	208
134	336
138	740
133	NM
137	NM
142	1,510
146	199,000

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
2. Blower enclosure lock combination is: 9906.
3. NA = Not Applicable.
4. NM = Not Measured.

GENERAL INFORMATION			
GEI Field Representatives: Heather Ballantyne Larry Welch		Start-time of monitoring work: 14:05 End-time of monitoring work: 16:05 System Status: ON	
Date: 02/02/07			
Weather: ~35°F, overcast			

INSTRUMENTATION INFORMATION			
Instrument	Manufacturer	Model	GEI Identification No.
PID (ppm)	ThermoEnvironmental	580B	OVM (NH)
Manometer (in H ₂ O)	Dwyer	Mark III-475-1-FM	NA
			Calibrant
			100 ppm Isobutylene
			Successful Calibration
			Yes
			Zeroed before each reading

FIELD MEASUREMENTS

System Configuration

Blower Enclosure Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
122-1	-0.22	1,100
122-2	-0.21	1,100
122-3	-0.22	1,100
126-1	-0.24	1,100
126-2	-0.20	1,100
126-3	-0.24	1,400
134-1	-0.33	1,100
134-2	-0.35	1,400
134-3	-0.31	1,400
138-1	-0.35	5,600
138-2	-0.36	4,600
138-3	-0.36	3,300
142-1	-0.22	2,400
142-2	-0.22	2,700
142-3	-0.21	2,000
146-1	-0.20	2,000
146-2	-0.20	1,700
146-3	-0.19	1,100

Extraction Point Valve Identification	Status (on/off?)
122-1	ON
122-2	ON
122-3	ON
126-1	ON
126-2	ON
126-3	ON
134-1	ON
134-2	ON
134-3	ON
138-1	ON
138-2	ON
138-3	ON
142-1	ON
142-2	ON
142-3	ON
146-1	ON
146-2	ON
146-3	ON

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Manifold 12 ¹	-0.34	0.0
Manifold 13 ¹	-0.33	0.0
Manifold 14 ¹	-0.36	1,100
Combined Influent	-0.63	2,000
Effluent	0.48	1,400

Effluent Flow

Manometer Reading (in H ₂ O)	Average Flow Rate (cfm)
NM	
NM	
NM	
NM	

Blower Condensation Cleanout?

NO

Interior Sub-Slab Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Room 122A	-0.02	1,700
Room 126A	-0.01	6,200
Room 133A	-0.01	4,000
Room 137A	-0.01	2,400
Room 142A	0.00	11,100
Room 146A	0.00	47,000

Interior Ambient Air Measurements

Classroom	PID Reading (ppb)
122	100
126	0
134	0
138	100
133	0
137	0
142	100
146	100

Notes:

- Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
- Blower enclosure lock combination is: 9906.
- NA = Not Applicable.
- NM = Not Measured.

GENERAL INFORMATION			
GEI Field Representatives:		Heather Ballantyne	
Date:	02/03/07	Start-time of monitoring work:	Exterior 7:47
Weather:	-30°F, sunny	End-time of monitoring work:	Interior 10:15
		System Status:	10:15
			ON

INSTRUMENTATION INFORMATION			
Instrument	Manufacturer	Model	GEI Identification No.
PID (ppb)	Pro-Rae Systems	ppb-RAE	PINE
Manometer (in H ₂ O)	Dwyer	Mark III-475-1-FM	NA
			Calibrant
			10 ppm Isobutylene
			Successful Calibration
			Yes
			Zeroed before each reading

FIELD MEASUREMENTS

Blower Enclosure Monitoring Points

Exterior Extraction Monitoring Points

System Configuration

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
122-1	-0.23	62
122-2	-0.22	118
122-3	-0.23	124
126-1	-0.22	192
126-2	-0.21	218
126-3	-0.25	109
134-1	-0.34	148
134-2	-0.35	538
134-3	-0.33	373
138-1	-0.37	1,428
138-2	-0.37	2,522
138-3	-0.37	1,758
142-1	-0.25	874
142-2	-0.24	425
142-3	-0.23	583
146-1	-0.20	432
146-2	-0.20	181
146-3	-0.21	296

Extraction Point Valve Identification	Status (on/off?)
122-1	ON
122-2	ON
122-3	ON
126-1	ON
126-2	ON
126-3	ON
134-1	ON
134-2	ON
134-3	ON
138-1	ON
138-2	ON
138-3	ON
142-1	ON
142-2	ON
142-3	ON
146-1	ON
146-2	ON
146-3	ON

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Manifold 12 ¹	-0.41	183
Manifold 13 ¹	-0.38	652
Manifold 14 ¹	-0.36	317
Combined Influent	-0.66	1,090
Effluent	0.48	785

Effluent Flow

Manometer Reading (in H ₂ O)	Average Flow Rate (cfm)
NM	
NM	
NM	
NM	

Interior Sub-Slab Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Room 122A	-0.08	1,328
Room 126A	-0.01	5,468
Room 133A	-0.01	2,081
Room 137A	0.03	1,328
Room 142A	0.00	1,743
Room 146A	-0.01	2,213

Interior Ambient Air Measurements

Classroom	PID Reading (ppb)
122	0
126	0
134	0
138	10
133	0
137	0
142	0
146	3

Blower Condensation Clean-out?

No

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
2. Blower enclosure lock combination is: 9506.
3. NA = Not Applicable.
4. NM = Not Measured.

GENERAL INFORMATION			
GEI Field Representatives: Heather Ballantyne		Start-time of monitoring work: Exterior Interior	
Date: 02/04/07		9:15 8:00	
Weather: ~15°F, sunny		11:22 9:15	
		ON	
System Status:			

INSTRUMENTATION INFORMATION			
Instrument	Manufacturer	Model	Calibrant
PID (ppb)	Pro-Rae Systems	ppb-RAE	10 ppm Isobutylene
Manometer (in H ₂ O)	Dwyer	Mark III-475-1-FM	NA
			Zeroed before each reading

FIELD MEASUREMENTS	
Exterior Extraction Monitoring Points	Blower Enclosure Monitoring Points

System Configuration

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
122-1	-0.23	226
122-2	-0.22	148
122-3	-0.23	74
126-1	-0.22	126
126-2	-0.21	158
126-3	-0.26	176
134-1	-0.34	419
134-2	-0.39	1,056
134-3	-0.37	381
138-1	-0.36	1,196
138-2	-0.38	2,232
138-3	-0.38	778
142-1	-0.26	439
142-2	-0.24	270
142-3	-0.22	330
146-1	-0.22	296
146-2	-0.19	212
146-3	-0.22	336

Interior Sub-Slab Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Room 122A	-0.01	746
Room 126A	-0.02	4,750
Room 133A	0.00	297
Room 137A	0.00	652
Room 142A	0.00	1,255
Room 146A	0.00	2,565

Extraction Point Valve Identification	Status (on/off?)
122-1	ON
122-2	ON
122-3	ON
126-1	ON
126-2	ON
126-3	ON
134-1	ON
134-2	ON
134-3	ON
138-1	ON
138-2	ON
138-3	ON
142-1	ON
142-2	ON
142-3	ON
146-1	ON
146-2	ON
146-3	ON

Interior Ambient Air Measurements

Classroom	PID Reading (ppb)
122	0
126	0
134	0
138	0
133	0
137	0
142	0
146	0

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Manifold 12 ¹	-0.38	241
Manifold 13 ¹	-0.36	436
Manifold 14 ¹	-0.36	328
Combined Influent	-0.63	528
Effluent	0.53	456

Effluent Flow

Manometer Reading (in H ₂ O)	Average Flow Rate (cfm)
NM	
NM	
NM	
NM	

Blower Condensation Cleanup?

NO

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
2. Blower enclosure lock combination is: 9906.
3. NA = Not Applicable.
4. NM = Not Measured.

GENERAL INFORMATION			
GEI Field Representatives: Heather Ballantyne		Start-time of monitoring work: 14:30	
Date: 02/05/07		End-time of monitoring work: 15:50	
Weather: ~15°F, windy, partly cloudy		System Status: ON	

INSTRUMENTATION INFORMATION			
Instrument	Manufacturer	Model	GEI Identification No.
PID (ppb)	Pro-Rae Systems	ppb-RAE	PINE
Manometer (in H ₂ O)	Dwyer	Mark III-475-1-FM	NA
			Calibrant
			10 ppm Isobutylene
			Successful Calibration
			Yes
			Zeroed before each reading

FIELD MEASUREMENTS

Blower Enclosure Monitoring Points

System Configuration

Exterior Extraction Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
122-1	NM	NM
122-2	-0.22	74
122-3	NM	NM
126-1	NM	NM
126-2	-0.24	149
126-3	NM	NM
134-1	NM	NM
134-2	-0.39	355
134-3	NM	NM
138-1	-0.37	1,517
138-2	-0.39	1,164
138-3	-0.36	921
142-1	NM	NM
142-2	-0.21	467
142-3	NM	NM
146-1	NM	NM
146-2	-0.19	398
146-3	NM	NM

Extraction Point Valve Identification	Status (on/off?)
122-1	ON
122-2	ON
122-3	ON
126-1	ON
126-2	ON
126-3	ON
134-1	ON
134-2	ON
134-3	ON
138-1	ON
138-2	ON
138-3	ON
142-1	ON
142-2	ON
142-3	ON
146-1	ON
146-2	ON
146-3	ON

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Manifold 12 ¹	-0.38	213
Manifold 13 ¹	-0.38	474
Manifold 14 ¹	-0.38	412
Combined Influent	-0.63	483
Effluent	0.59	472

Effluent Flow

Manometer Reading (in H ₂ O)
NM
NM
NM
NM
Average Flow Rate (cfm)

Blower Condensation Cleanup?

NO

Interior Sub-Slab Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Room 122A	-0.02	272
Room 126A	-0.01	1,951
Room 133A	0.00	1,164
Room 137A	0.00	1,595
Room 142A	0.00	1,955
Room 146A	-0.01	1,538

Interior Ambient Air Measurements

Classroom	PID Reading (ppb)
122	0
126	0
134	0
138	0
133	0
137	0
142	0
146	1

Notes:

- Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
- Blower enclosure leak combination is: 99005.
- NA = Not Applicable.
- NM = Not Measured.

GENERAL INFORMATION			
GEI Field Representatives: Heather Ballantyne Krista Wolfe		Exterior Interior	
Date: 02/06/07	Start-time of monitoring work: 15:15		
Weather: -25°F, clear	End-time of monitoring work: 16:30		
	System Status: ON		

INSTRUMENTATION INFORMATION			
Instrument	Manufacturer	Model	GEI Identification No.
PID (ppb)	Pro-Rae Systems	ppb-RAE	PINE
Manometer (in H ₂ O)	Dwyer	Mark III-475-1-FM	NA
			Calibrant 10 ppm Isobutylene
			Successful Calibration Yes
			Zeroed before each reading

FIELD MEASUREMENTS			
<u>Exterior Extraction Monitoring Points</u>		<u>Blower Enclosure Monitoring Points</u>	
System Configuration			

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
122-1	NM	NM
122-2	-0.23	368
122-3	NM	NM
126-1	NM	NM
126-2	-0.22	512
126-3	NM	NM
134-1	NM	NM
134-2	-0.36	375
134-3	NM	NM
138-1	-0.38	722
138-2	-0.36	798
138-3	-0.36	589
142-1	NM	NM
142-2	-0.24	618
142-3	NM	NM
146-1	NM	NM
146-2	-0.21	355
146-3	NM	NM

Extraction Point Valve Identification	Status (on/off?)
122-1	ON
122-2	ON
122-3	ON
126-1	ON
126-2	ON
126-3	ON
134-1	ON
134-2	ON
134-3	ON
138-1	ON
138-2	ON
138-3	ON
142-1	ON
142-2	ON
142-3	ON
146-1	ON
146-2	ON
146-3	ON

	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Manifold 12'	-0.36	285
Manifold 13'	-0.39	4479
Manifold 14'	-0.36	787
Combined Influent	-0.65	633
Effluent	0.59	669

Effluent Flow

Manometer Reading (in H ₂ O)	Average Flow Rate (cfm)
0.05	
0.10	
0.11	
99.9	

Interior Sub-Slab Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Room 122A	0.00	613
Room 126A	0.00	3563
Room 133A	0.00	1299
Room 137A	0.00	1967
Room 142A	0.00	2412
Room 146A	0.00	12,100

Interior Ambient Air Measurements

Classroom	PID Reading (ppb)
122	0
126	0
134	0
138	0
133	0
137	4
142	8
146	9

Blower Condensation Cleanup?

YES

Notes:

- 1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
- 2. Blower enclosure lock combination is: 9906.
- 3. NA = Not Applicable.
- 4. NM = Not Measured.

GENERAL INFORMATION			
GEI Field Representatives: Heather Ballantyne		Start-time of monitoring work: Exterior Interior	
Date: 02/07/07		19:30 15:30	
Weather: ~20°F, clear		20:30 15:37	
System Status:		ON	

INSTRUMENTATION INFORMATION				
Instrument	Manufacturer	Model	GEI Identification No.	Calibrant
PID (ppb)	Pro-Rae Systems	ppb-RAE	PINE	10 ppm Isobutylene
Manometer (in H ₂ O)	Dwyer	Mark III-475-000-FM	NA	NA
				Successful Calibration
				Yes
				Zeroed before each reading

FIELD MEASUREMENTS
System Configuration
Blower Enclosure Monitoring Points

Exterior Extraction Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
122-1	NM	NM
122-2	-0.236	220
122-3	NM	NM
126-1	NM	NM
126-2	-0.216	166
126-3	NM	NM
134-1	NM	NM
134-2	-0.371	544
134-3	NM	NM
138-1	-0.386	1073
138-2	-0.379	695
138-3	-0.388	622
142-1	NM	NM
142-2	-0.237	386
142-3	NM	NM
146-1	NM	NM
146-2	-0.211	254
146-3	NM	NM

Extraction Point Valve Identification	Status (on/off?)
122-1	ON
122-2	ON
122-3	ON
126-1	ON
126-2	ON
126-3	ON
134-1	ON
134-2	ON
134-3	ON
138-1	ON
138-2	ON
138-3	ON
142-1	ON
142-2	ON
142-3	ON
146-1	ON
146-2	ON
146-3	ON

	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Manifold 12 ¹	-0.367	1715
Manifold 13 ¹	-0.353	993
Manifold 14 ¹	-0.391	1385
Combined Influent	-0.651	738
Effluent	0.547	979

Effluent Flow

Manometer Reading (in H ₂ O)	Average Flow Rate (cfm)
0.140	
0.053	
0.059	
99	

Blower Condensation Cleanup?

YES

Interior Sub-Slab Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Room 122A	NM	NM
Room 126A	NM	NM
Room 133A	NM	NM
Room 137A	NM	NM
Room 142A	NM	NM
Room 146A	NM	NM

Interior Ambient Air Measurements

Classroom	PID Reading (ppb)
122	0
126	0
134	0
138	0
133	0
137	2
142	0
146	0

Notes:

- 1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
- 2. Blower enclosure lock combination is: 9906.
- 3. NA = Not Applicable.
- 4. NM = Not Measured.
- 5. Interior sub-slab monitoring points not measured due to indoor air testing today.

GENERAL INFORMATION			
GEI Field Representatives: Krista Wolfe		Start-time of monitoring work: 17:00	
Date: 02/08/07		End-time of monitoring work: 19:00	
Weather: ~25°F, cloudy		System Status: ON	

INSTRUMENTATION INFORMATION			
Instrument	Manufacturer	Model	Calibrant
PID (ppb)	Pro-Rae Systems	ppb-RAE	10 ppm Isobutylene
Manometer (in H ₂ O)	Dwyer	Mark III-475-000-FM	NA
			Successful Calibration
			Yes
			Zeroed before each reading

FIELD MEASUREMENTS			
Exterior Extraction Monitoring Points		Blower Enclosure Monitoring Points	
System Configuration			

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
122-1	-0.229	3420
122-2	-0.234	263
122-3	-0.239	505
126-1	-0.244	244
126-2	-0.215	311
126-3	-0.264	629
134-1	-0.356	123
134-2	-0.361	1488
134-3	-0.36	34
138-1	-0.367	1004
138-2	-0.379	399
138-3	-0.376	180
142-1	-0.245	43
142-2	-0.247	38
142-3	-0.239	254
146-1	-0.211	102
146-2	-0.212	100
146-3	-0.234	137

Extraction Point Valve Identification	Status (on/off?)
122-1	ON
122-2	ON
122-3	ON
126-1	ON
126-2	ON
126-3	ON
134-1	ON
134-2	ON
134-3	ON
138-1	ON
138-2	ON
138-3	ON
142-1	ON
142-2	ON
142-3	ON
146-1	ON
146-2	ON
146-3	ON

	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Manifold 12 ¹	-0.362	118
Manifold 13 ¹	-0.357	147
Manifold 14 ¹	-0.392	153
Combined Influent	-0.666	192
Effluent	-0.506	180

Effluent Flow

Manometer Reading (in H ₂ O)	Average Flow Rate (cfm)
0.072	
0.098	
0.113	
103.4	

Blower Condensation Cleanup? YES

Interior Sub-Slab Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Room 122A	-0.009	974
Room 126A	0.000	3392
Room 133A	0.000	933
Room 137A	0.000	1399
Room 142A	0.000	786
Room 146A	-0.003	4395

Interior Ambient Air Measurements

Classroom	PID Reading (ppb)
122	0
126	0
134	0
138	0
133	0
137	3
142	0
146	0

Notes:

- 1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
- 2. Blower enclosure lock combination is: 9906.
- 3. NA = Not Applicable.
- 4. NM = Not Measured.
- 5. Sub-slab soil gas samples collected today.

GENERAL INFORMATION			
GEI Field Representatives: Heather Ballantyne Samantha Slater		Exterior Interior	
Date: 03/08/07		21:00 21:45	
Weather: ~15°F, windy, slightly overcast		21:45 22:00	
Start-time of monitoring work:		ON	
End-time of monitoring work:			
System Status:			

INSTRUMENTATION INFORMATION			
Instrument	Manufacturer	Model	GEI Identification No.
PID (ppb)	Pro-Rae Systems	ppb-RAE	PINE
Manometer (in H ₂ O)	Dwyer	Mark III-475-0000-FM	NA
			Calibrant
			10 ppm Isobutylene
			Successful Calibration
			Yes
			Zeroed before each reading

FIELD MEASUREMENTS	
Exterior Extraction Monitoring Points	System Configuration

Blower Enclosure Monitoring Points

	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Manifold 12 ¹	-0.361	958
Manifold 13 ¹	-0.372	425
Manifold 14 ¹	-0.356	602
Combined Influent	-0.61	534
Effluent	-0.625	428

Effluent Flow

Manometer Reading (in H ₂ O)	Average Flow Rate (cfm)
0.069	
0.099	
0.106	
0.109	
106	

Blower Condensation Cleanout?

Dry- Not necessary

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
2. Blower enclosure lock combination is: 9906.
3. NA = Not Applicable.
4. NM = Not Measured.
5. Effluent flow is measured with a pitot tube and manometer at 4 different points within the effluent pipe.

Extraction Point Valve Identification	Status (on/off?)
122-1	ON
122-2	ON
122-3	ON
126-1	ON
126-2	ON
126-3	ON
134-1	ON
134-2	ON
134-3	ON
138-1	ON
138-2	ON
138-3	ON
142-1	ON
142-2	ON
142-3	ON
146-1	ON
146-2	ON
146-3	ON

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
122-1	-0.219	99
122-2	-0.22	470
122-3	-0.236	95
126-1	-0.265	302
126-2	-0.222	86
126-3	-0.259	0
134-1	-0.341	0
134-2	-0.391	124
134-3	-0.397	37
138-1	-0.382	746
138-2	-0.407	125
138-3	-0.364	61
142-1	-0.268	4
142-2	-0.136	65
142-3	-0.254	167
146-1	-0.227	1028
146-2	-0.223	60
146-3	-0.228	146

Interior Sub-Slab Monitoring Points

Monitoring Point Identification	Manometer Reading (in. H ₂ O)	PID Reading (ppb)
Room 122A	-0.009	417
Room 126A	0.000	580
Room 133A	0.000	441
Room 137A	0.003	270
Room 142A	0.000	151
Room 146A	-0.004	1176

Interior Ambient Air Measurements

Classroom	PID Reading (ppb)
122	0
126	0
134	0
138	0
133	0
137	0
142	0
146	0

GENERAL INFORMATION			
GEI Field Representatives:		L. Welch	
Date:	03/01/07	Start-time of monitoring work:	18:10
Weather:	Fair, ~30°F	End-time of monitoring work:	19:05
		System Status:	ON

INSTRUMENTATION INFORMATION				
Instrument	Manufacturer	Model	GEI Identification No.	Successful Calibration
OVM (ppm)	ThermoEnvironmental	580B	GEI	Yes
Manometer (in H ₂ O)	Dwyer	Mark III-475-0000 Series	NA	Zeroed before each reading

FIELD MEASUREMENTS

Discharge Pressure Port

Insert Increment	Pressure (in. H ₂ O)
0.25"	0.10
0.5"	0.10
1.0"	0.11
2.0"	0.09
Average Pressure (in. H ₂ O)	
108	
Average Flow Rate (cfm)	

Condensate Accumulated?

YES

Condensate Drained?

YES

Shed Pressure/VOC Measurements

Port ID	Typical Pressure Range (in. H ₂ O)	Pressure (in. H ₂ O)	Typical Range of VOCs (ppb)	VOC (ppb)
Manifold 12	-0.300 to -0.500	-0.35	0 to 2000	0.8 ppm
Manifold 13	-0.300 to -0.500	-0.39	0 to 5000	1.0 ppm
Manifold 14	-0.300 to -0.500	-0.34	0 to 2000	1.0 ppm
Combined Influent	-0.600 to -0.700	-0.65	0 to 2000	0.8 ppm
Effluent	0.480 to 0.600	0.48	0 to 2500	1.0 ppm

Notes:

- 1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
- 2. Blower enclosure lock combination is: 9906.
- 3. Notify Project Manager immediately if readings are outside indicated Typical Measurement Range.

Comments

System operating well.
Installed cellular modem and autodialer (with Kevin Dady and Darren Clark of GEI)

GENERAL INFORMATION			
GEI Field Representatives:		H. Ballantyne S. Slater	
Date:	03/08/07	Start-time of monitoring work:	21:00
Weather:	windy, cloudy, ~15°F	End-time of monitoring work:	21:45
		System Status:	ON

INSTRUMENTATION INFORMATION				
Instrument	Manufacturer	Model	GEI Identification No.	Successful Calibration
PID (ppb)	Pro-Rae Systems	ppb-RAE	PINE	Yes
Manometer (in. H ₂ O)	Dwyer	Mark III-475-0000 Series	NA	Zeroed before each reading

FIELD MEASUREMENTS	
<u>Shed Secure?</u>	
YES	

<u>Condensate Accumulated?</u>
NO

<u>Condensate Drained?</u>
NO

Shed Pressure/VOC Measurements

Port ID	Typical Pressure Range (in. H ₂ O)	Pressure (in. H ₂ O)	Typical Range of VOCs (ppb)	VOC (ppb)
Manifold 12	-0.300 to -0.500	-0.361	0 to 2000	958
Manifold 13	-0.300 to -0.500	-0.372	0 to 5000	425
Manifold 14	-0.300 to -0.500	-0.356	0 to 2000	602
Combined Influent	-0.600 to -0.700	-0.610	0 to 2000	534
Effluent	0.480 to 0.600	-0.525	0 to 2000	428

- Notes:
- Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
 - Blower enclosure lock combination is: 9906.
 - Notify Project Manager immediately if readings are outside indicated Typical Measurement Range.

Insert Increment	Pressure (in. H ₂ O)
0.25"	0.069
0.5"	0.099
1.0"	0.106
2.0"	0.109
Average Pressure (in. H ₂ O)	
Average Flow Rate (cfm)	

<u>Comments</u>

GENERAL INFORMATION			
GEI Field Representatives:		K. Wolfe T. Daigle	
Date:	03/14/07	Start-time of monitoring work: 12:15	
Weather:	cloudy, -60°F	End-time of monitoring work: 13:00	
		System Status: ON	

INSTRUMENTATION INFORMATION				
Instrument PID (ppb)	Manufacturer Pro-Rae Systems	Model ppb-RAE	GEI Identification No. PINE	Successful Calibration Yes
Manometer (in. H ₂ O)	Dwyer	Mark III-475-0000 Series	NA	Zeroed before each reading

FIELD MEASUREMENTS

<u>Shed Secure?</u>																			
YES																			
<u>Condensate Accumulated?</u>																			
NO																			
<u>Condensate Drained?</u>																			
NA																			
<u>Shed Pressure/VOC Measurements</u>																			
<table><tr><th>Insert Increment</th><th>Pressure (in. H₂O)</th></tr><tr><td>0.25"</td><td>0.12</td></tr><tr><td>0.5"</td><td>0.100</td></tr><tr><td>1.0"</td><td>0.11</td></tr><tr><td>2.0"</td><td>0.09</td></tr><tr><td colspan="2">Average Pressure (in. H₂O)</td></tr><tr><td colspan="2">108</td></tr><tr><td colspan="2">Average Flow Rate (cfm)</td></tr><tr><td colspan="2"></td></tr></table>		Insert Increment	Pressure (in. H ₂ O)	0.25"	0.12	0.5"	0.100	1.0"	0.11	2.0"	0.09	Average Pressure (in. H ₂ O)		108		Average Flow Rate (cfm)			
Insert Increment	Pressure (in. H ₂ O)																		
0.25"	0.12																		
0.5"	0.100																		
1.0"	0.11																		
2.0"	0.09																		
Average Pressure (in. H ₂ O)																			
108																			
Average Flow Rate (cfm)																			

<u>Shed Pressure/VOC Measurements</u>			
Port ID	Typical Pressure Range (in. H ₂ O)	Pressure (in. H ₂ O)	VOC (ppb)
Manifold 12	-0.300 to -0.500	-0.34	22
Manifold 13	-0.300 to -0.500	-0.352	273
Manifold 14	-0.300 to -0.500	-0.315	111
Combined Influent	-0.600 to -0.700	-0.605	153
Effluent	0.480 to 0.600	-0.419	86
<u>Comments</u>			
Checked batteries in autodialer. LED light said batteries were fine. Brought extra batteries for autodialer.			

- Notes:
- 1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
 - 2. Blower enclosure lock combination is: 9906.
 - 3. Notify Project Manager immediately if readings are outside indicated Typical Measurement Range.

GENERAL INFORMATION			
GEI Field Representatives:		S. Slater T. Daigle	
Date:	03/22/07	Start-time of monitoring work: 13:56	
Weather:	sunny, -60°F	End-time of monitoring work: 14:45	
		System Status: ON	

INSTRUMENTATION INFORMATION				
Instrument	Manufacturer	Model	GEI Identification No.	Successful Calibration
PID (ppb)	Pro-Rae Systems	ppb-RAE	PINE	Yes
Manometer (in H ₂ O)	Dwyer	Mark III-475-0000 Series	NA	Zeroed before each reading

FIELD MEASUREMENTS

Discharge Pressure Port

Shed Secure?
YES

Condensate Accumulated?
NO

Condensate Drained?
NA

Insert Increment	Pressure (in. H ₂ O)
0.25"	NM
0.5"	NM
1.0"	NM
2.0"	NM
Average Pressure (in. H ₂ O)	
Average Flow Rate (cfm)	
NA	

Shed Pressure/VOC Measurements

Port ID	Typical Pressure Range (in. H ₂ O)	Pressure (in. H ₂ O)	Typical Range of VOCs (ppb)	VOC (ppb)
Manifold 12	-0.300 to -0.500	-0.325	0 to 2000	144
Manifold 13	-0.300 to -0.500	-0.350	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.345	0 to 2000	0
Combined Influent	-0.600 to -0.700	-0.615	0 to 2000	0
Effluent	0.450 to 0.600	0.590	0 to 2000	1058

Notes:

- 1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
- 2. Blower enclosure lock combination is: 9906.
- 3. Notify Project Manager immediately if readings are outside indicated Typical Measurement Range.

Comments

Low VOC readings may reflect a ppb-Rae malfunction. Manometer malfunction. Did not measure Flows today.

GENERAL INFORMATION			
GEI Field Representatives:		S. Slater T. Daigle	
Date:	03/29/07	Start-time of monitoring work: 14:53	
Weather:	sunny, ~60°F	End-time of monitoring work:	13:35
		System Status:	ON

INSTRUMENTATION INFORMATION				
Instrument	Manufacturer	Model	GEI Identification No.	Successful Calibration
PID (ppb)	Pro-Rae Systems	ppb-RAE	PINE	Yes
Manometer (in H ₂ O)	Dwyer	Mark III-475-0000 Series	NA	Zeroed before each reading

FIELD MEASUREMENTS

Shed Secure?

YES

Condensate Accumulated?

NO

Condensate Drained?

NA

Shed Pressure/VOC Measurements

Part ID	Typical Pressure Range (in. H ₂ O)	Pressure (in. H ₂ O)	Typical Range of VOCs (ppb)	VOC (ppb)
Manifold 12	-0.300 to -0.500	-0.350	0 to 2000	85
Manifold 13	-0.300 to -0.500	-0.390	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.400	0 to 2000	0
Combined Influent	-0.600 to -0.700	-0.630	0 to 2000	0
Effluent	0.480 to 0.600	0.550	0 to 2000	600

Notes:

- 1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.
- 2. Blower enclosure lock combination is: 9906.
- 3. Notify Project Manager immediately if readings are outside indicated Typical Measurement Range.

Discharge Pressure Port

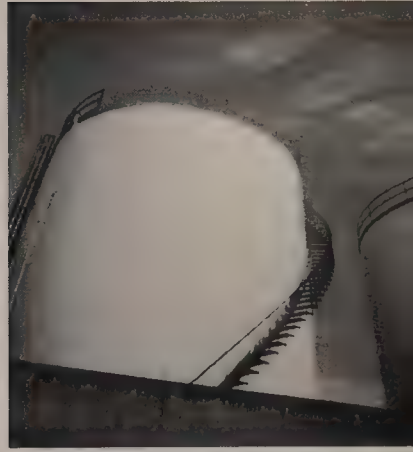
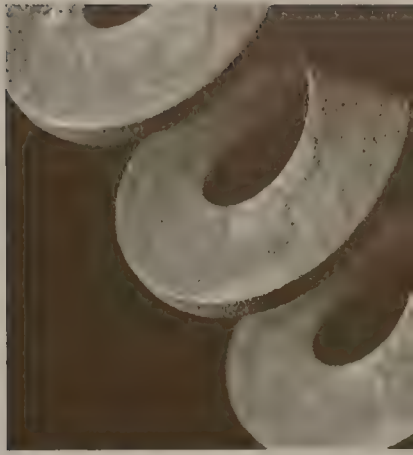
Insert Increment	Pressure (in H ₂ O)
0.25"	0.080
0.5"	0.080
1.0"	0.070
2.0"	0.070
Average Pressure (in H ₂ O)	
93	
Average Flow Rate (cfm)	

Comments

Had difficulty calibrating ppb-RAE. May account for low values in Manifold 13, 14, and combined influent.



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Appendix H

Capuano Center SSDS VOC Concentration Graphs

Table 1

Sub-Slab PID Monitoring Data
Data Collected through March 31, 2007
Sub-Slab Depressurization System
Capuano Early Childhood Center
Sommerville, MA

Date	Interior Sub-Slab Monitoring Points					Blower Enclosure Monitoring Points					
	Room 122A	Room 126A	Room 133A	Room 137A	Room 142A	Room 146A	Manifold 12	Manifold 13	Manifold 14	Combined Influent	Effluent
	PID Reading (ppbbV as isobutylene)										
1/31/07	440	641	469	800	412	3,400	NM	NM	NM	NM	NM
2/1/07	492,000	305,000	975,000	1,244,000	210	331,000	NM	NM	NM	NM	NM
2/2/07	1,700	6,200	4,000	2,400	11,100	47,000	0	0	1,100	2,000	1,400
2/3/07	1,328	5,468	2,081	1,328	1,743	2,213	183	652	317	1,090	785
2/4/07	746	4,750	297	652	1,255	2,565	241	436	328	528	456
2/5/07	272	1,951	1,164	1,595	1,955	1,538	213	474	412	483	472
2/6/07	613	3,563	1,299	1,967	2,412	12,100	285	4,479	787	633	669
2/7/07	NM	NM	NM	NM	NM	NM	1,715	993	1,385	738	979
2/8/07	974	3,392	933	1,399	786	4,395	118	147	153	192	180
2/20/07	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/07	NM	NM	NM	NM	NM	NM	800	1,000	1,000	800	1,000
3/8/07	417	580	441	270	151	1,176	958	425	602	534	428
3/14/07	NM	NM	NM	NM	NM	NM	22	273	111	163	86
3/22/07	NM	NM	NM	NM	NM	NM	144	0	0	0	1,058
3/29/07	NM	NM	NM	NM	NM	NM	85	0	0	0	600

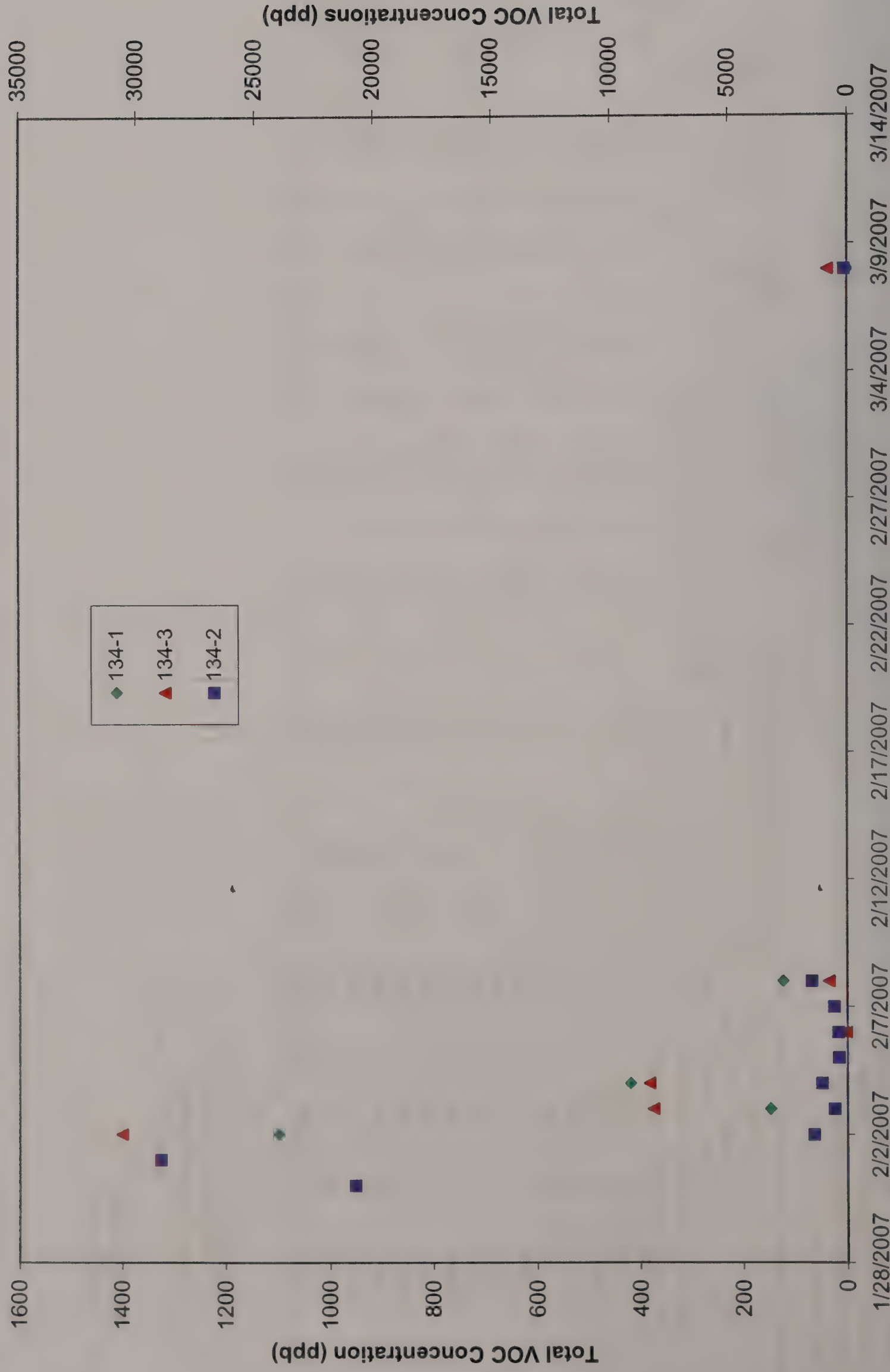
General Notes:

1. ppbV = parts per billion by volume
2. PID = photoionization detector
3. All measurements were collected with a PID.

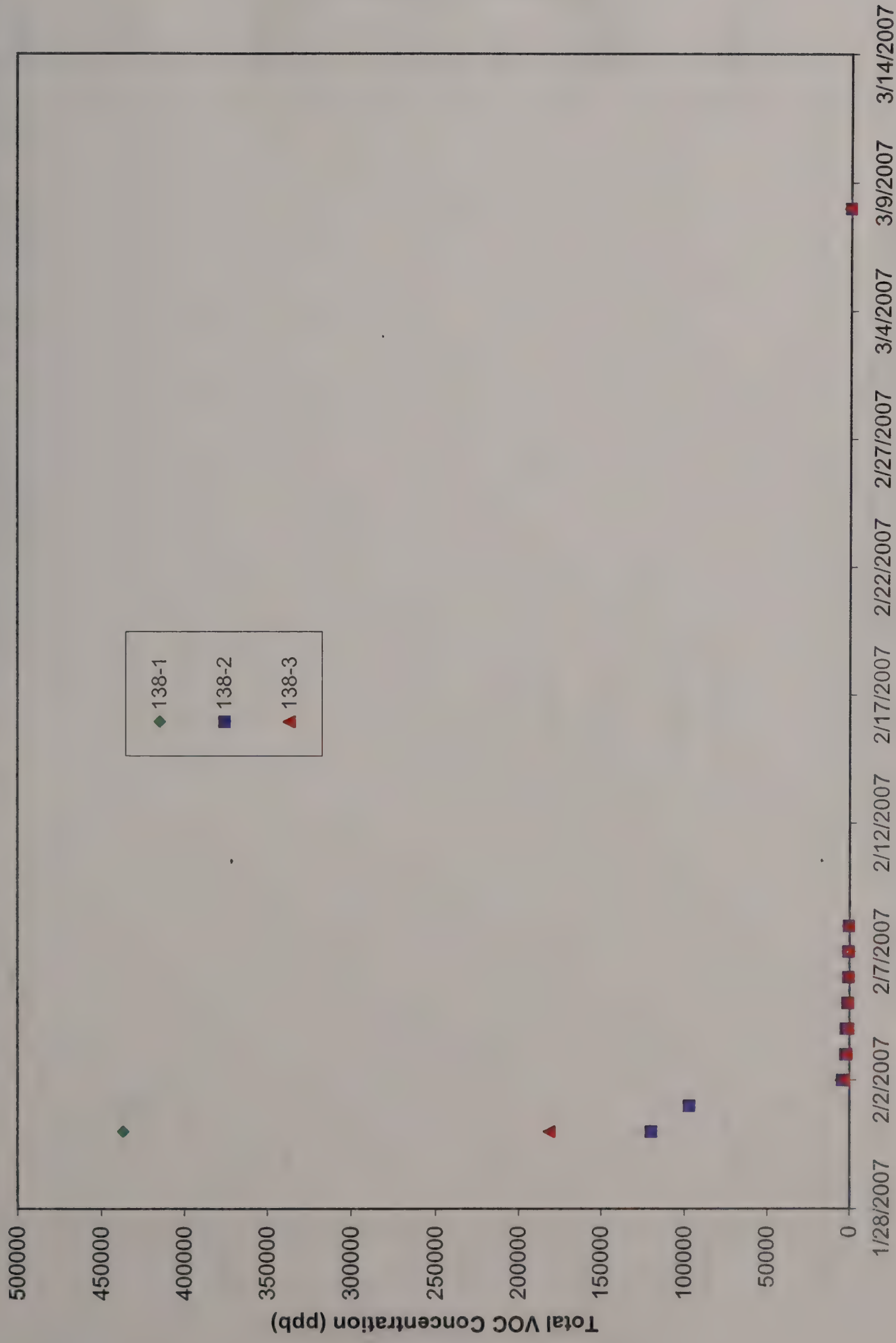
Qualifying Notes:

NM = Not Measured

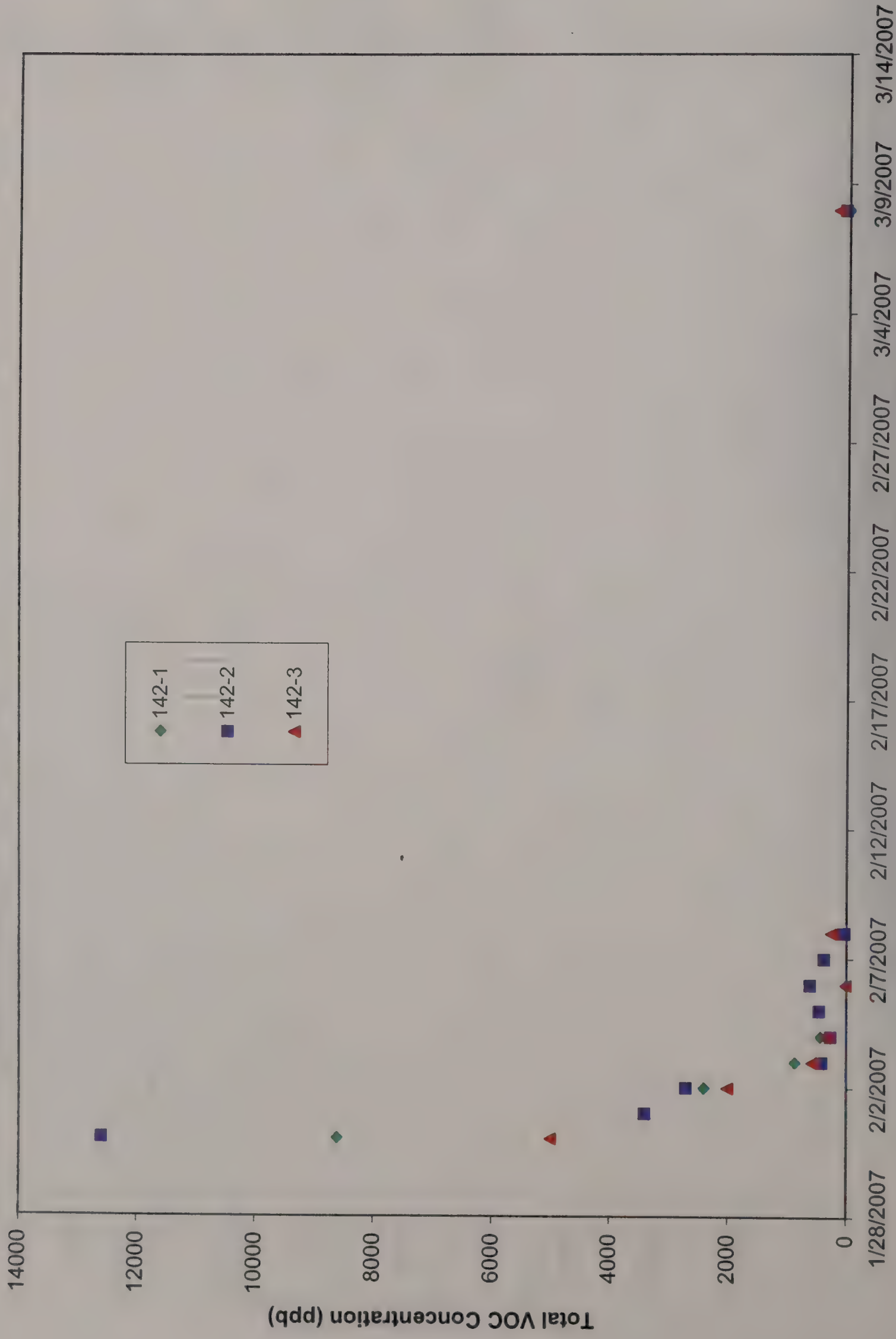
Total VOC Concentrations at Exterior Enclosure Monitoring Points Room 134 - Capuano Early Childhood Center



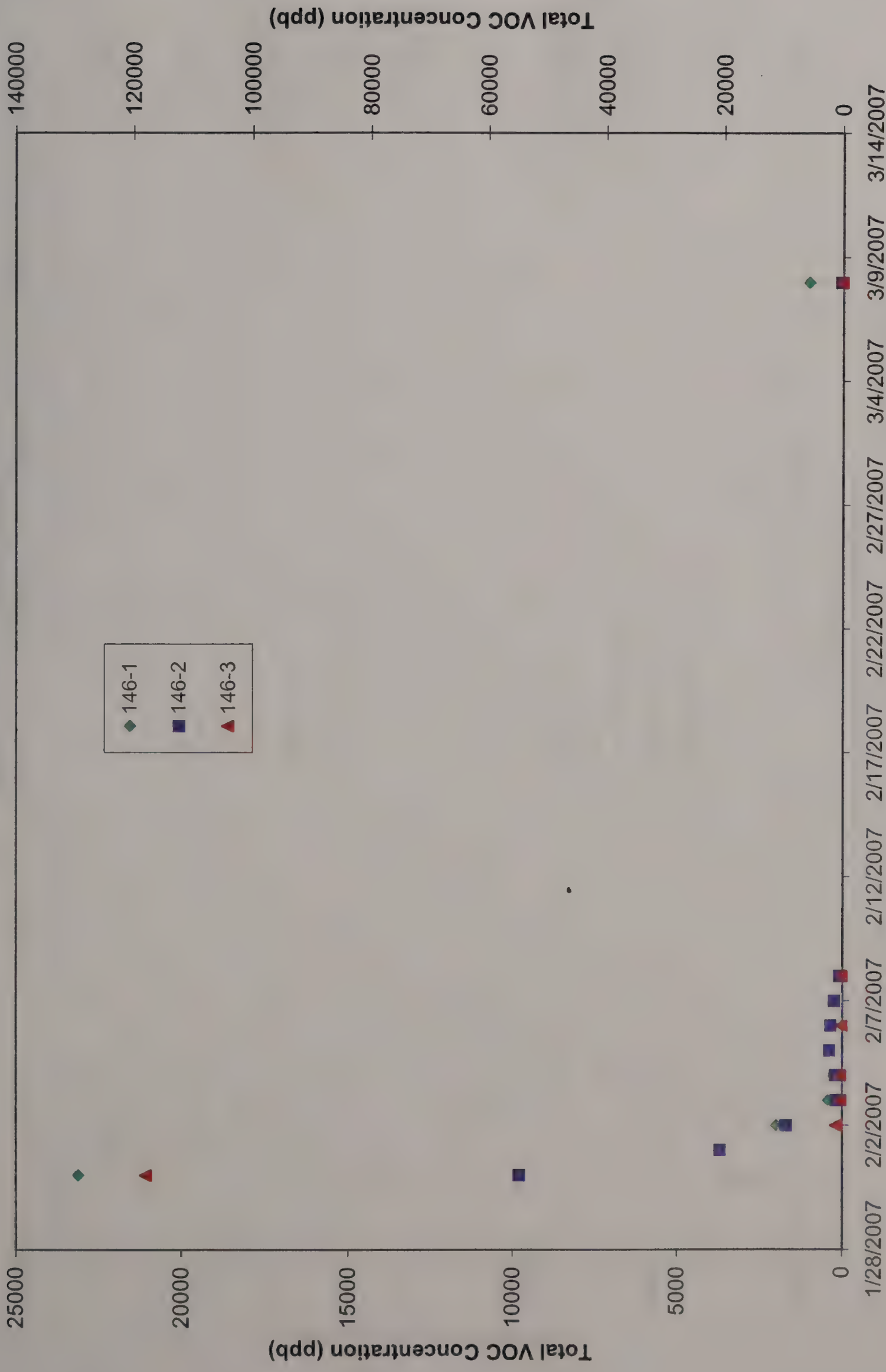
Total VOC Concentrations at Exterior Enclosure Monitoring Points Room 138 - Capuano Early Childhood Center



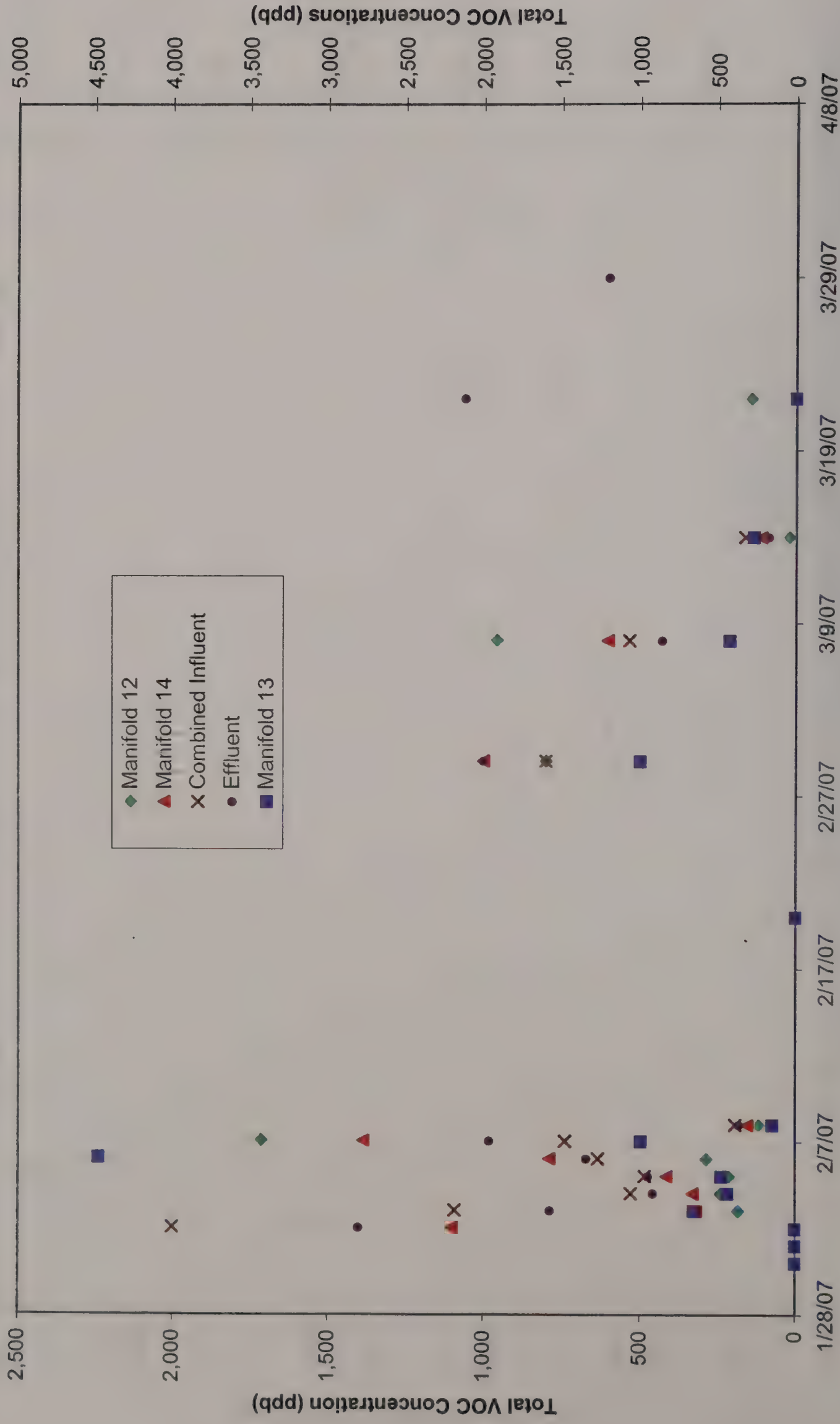
Total VOC Concentrations at Exterior Enclosure Monitoring Points Room 142 - Capuano Early Childhood Center



Total VOC Concentrations at Exterior Enclosure Monitoring Points Room 146 - Capuano Early Childhood Center

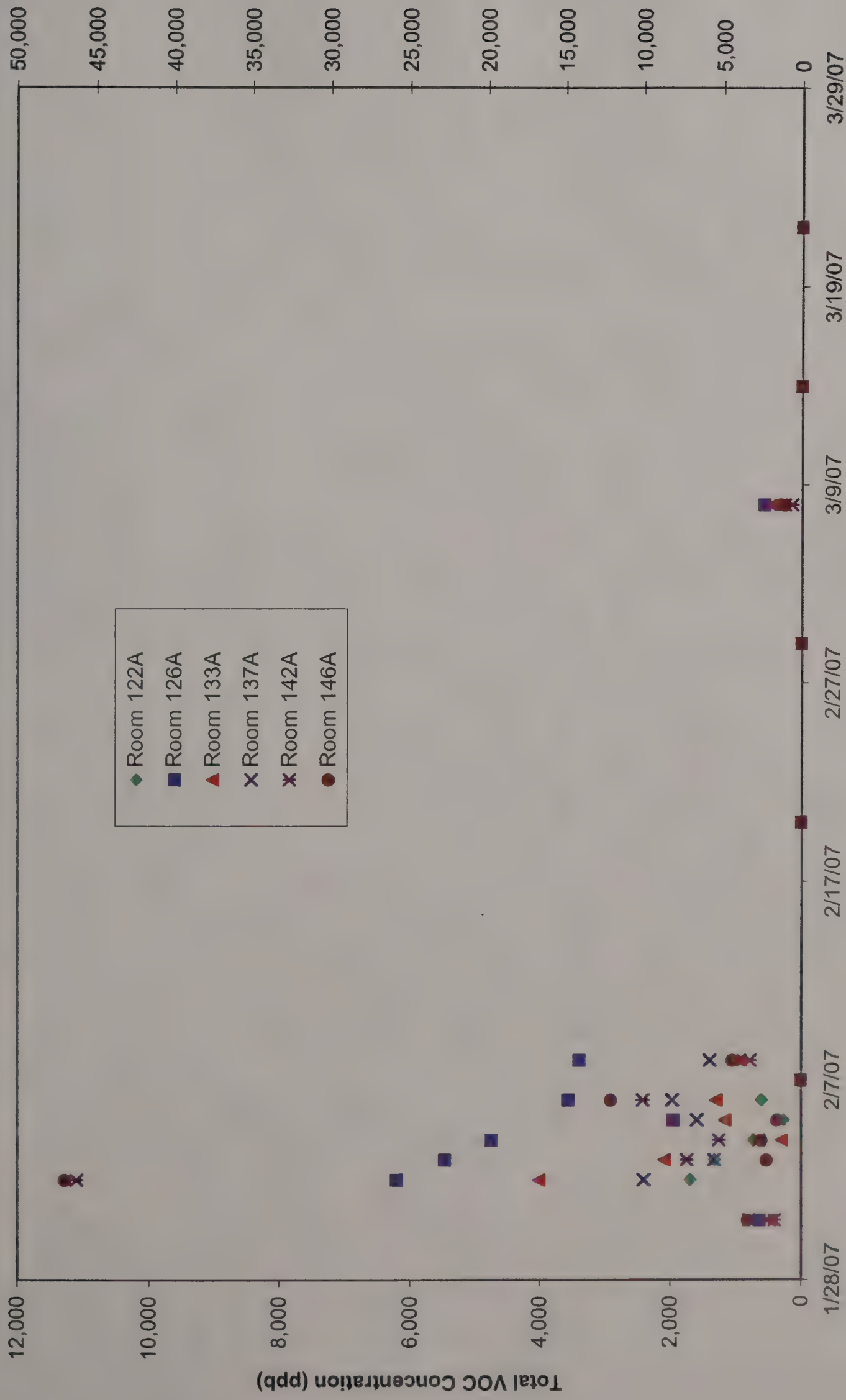


Total VOC Concentrations by PID at Blower Enclosure Monitoring Points Sub-Slab Depressurization System Capuano Early Childhood Center



Note: Total VOC concentrations were measured using a photoionization detector (PID).
Refer to Table 1 for qualifying notes.

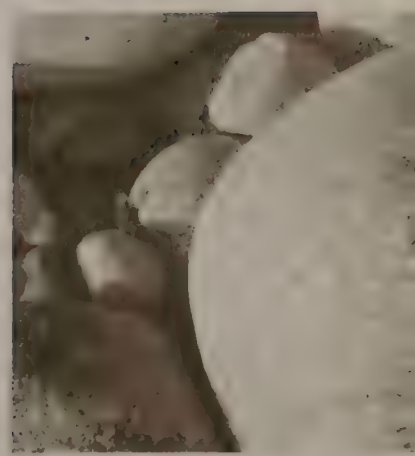
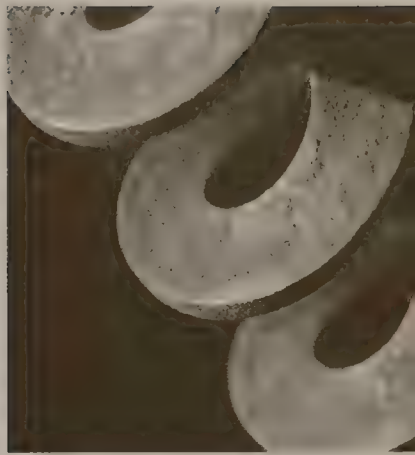
Total VOC Concentrations by PID at Interior Sub-Slab Monitoring Points Sub-Slab Depressurization System Capuano Early Childhood Center



Note: Total VOC concentrations were measured using a photoionization detector (PID).
Refer to Table 1 for qualifying notes.



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Appendix I

Soil Vapor and Sub-Slab Soil Vapor Sampling Checklists and Photograph Logs

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **K. Wolfe**

Date: **2/28/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **9 Knowlton Street**

Property Contact: **Charles Schofield (Owner)**

Contact's Phone: Home: **(617) 625-8098**

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **1**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building: **2 w/ 1/2 floor.**

Type of Ground Cover Around Outside of Building: **Concrete asphalt**

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **688ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **Cinder Blocks, stone aggregate**

Integrity: **Concrete with Cracks**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|--|-------------------------------------|--|---|
| <input checked="" type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|--|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input checked="" type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
- ☒ Individual Air Conditioning Units
- ☒ Bathroom Ventilation Fans
- ☐ Mechanical Fans
- ☒ Kitchen Range Hood Fan
- ☐ Other: 4 AC on 2nd floor. kit & bthrm fans on both floors

Type of fuel utilized:

- ☒ Natural Gas
- ☐ Electric
- ☐ Fuel Oil
- ☐ Wood
- ☐ Coal
- ☐ Solar
- ☐ Kerosene
- ☐ Outside (Fresh) Air Intake

Septic system? No

Irrigation/private well? No

Existing subsurface depressurization (radon) system in place? No Radon System

Has the building been weatherized with any of the following:

- ☐ Insulation
- ☐ Storm Windows
- ☐ Energy Efficient Windows
- ☐ Other: Thermo pane windows year round

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners	See attached photos	<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **No**

PID screening of cracks in wall/ floor and/or wall/floor interface: **No**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments:

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **few times daily 2nd floor** Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☒ When were dry-cleaned clothes last brought into the building? **2 weeks**

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

Charles works w/ & has dry cleaning chemicals in basement

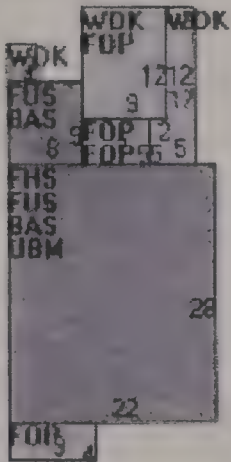
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: Tufts Street
Project Number: 045162
Address: 9 Knowlton Street
Date: 2/28/2007
Logged by: K. Wolfe

Sub-Slab Monitoring Point IDs:
SS1

Basement Sketch



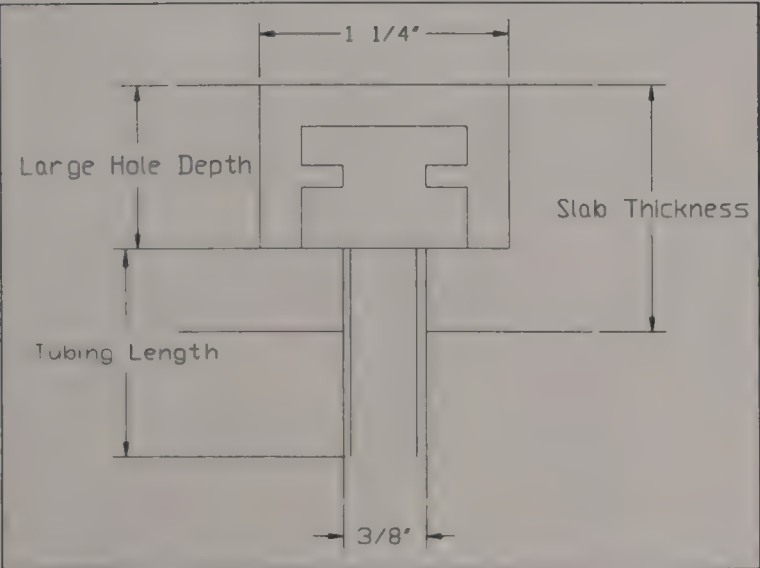
Ceiling Height: 7'2"
Basement Height Above
Grade: 2'8"

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:

N/A

Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	2.5"			
Tubing Length:	1.75"			
Type of Material Under Slab:	NR			
Large Hole Depth:	2.5"			

Comments: Bulkhead entrance, 3 basement windows.
NR = Not recovered



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
9 Knowlton Street

Sample ID: **SS1**

Date: **02/28/2007**

Sampling personnel: **K. Wolfe**

Summa Canister ID: **M136**

Flow Regulator ID: **MC072**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **2:04:00 PM**

Sampling Finish Time: **3:26:00 PM**

During Sampling	
Time	Vacuum
2:36:00 PM	22.5

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **32.5 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Photographs taken before sampling? **No** If Yes, what time: Taken by:

Photographs taken after sampling? **No** If Yes, what time: NA Taken by: NA

Comments: **question accuracy? Of peak 9 ppm**

Vacuum prior to sampling: **0.000 in wc**

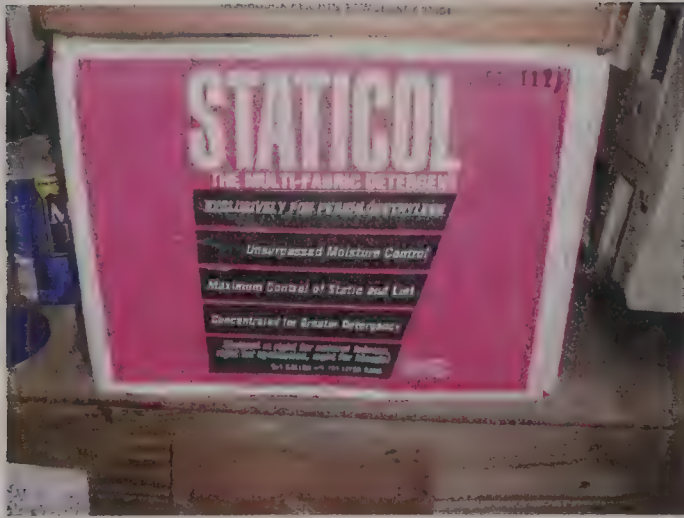
Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **0 ppm, peak 9 ppm**

Amount of air purged prior to sampling: **10 min flush**

Sub-Slab Installation Photo Log: 9 Knowlton Street (February 28, 2007)

1. Laundry chemicals near the center of the southeast wall of the basement
2. Laundry chemicals near the center of the southeast wall of the basement
3. Northeastern basement wall
4. Southeastern basement wall
5. Northeastern basement wall
6. Northwestern basement wall
7. Northwestern basement wall
8. Chemicals in shelves along the northwestern basement wall
9. Laundry chemicals in shelves along southeastern basement wall
10. Laundry chemicals in shelves along southeastern basement wall
11. View of southeastern wall from outside of the basement
12. Southeastern basement wall
13. Southwestern basement wall
14. Northeast side of basement ceiling
15. Southwest side of basement ceiling
16. Paint near the stairs on the southeastern wall
17. Exterior view of the southern corner of the residence
18. Exterior view of the western corner of the residence
19. Exterior view of the northern corner of the residence
20. Summa canister set-up soil vapor sample 045162-9KNOW-SS1
21. Sample port for soil vapor sample 045162-9KNOW-SS1
22. Sample port for soil vapor sample 045162-9KNOW-SS1



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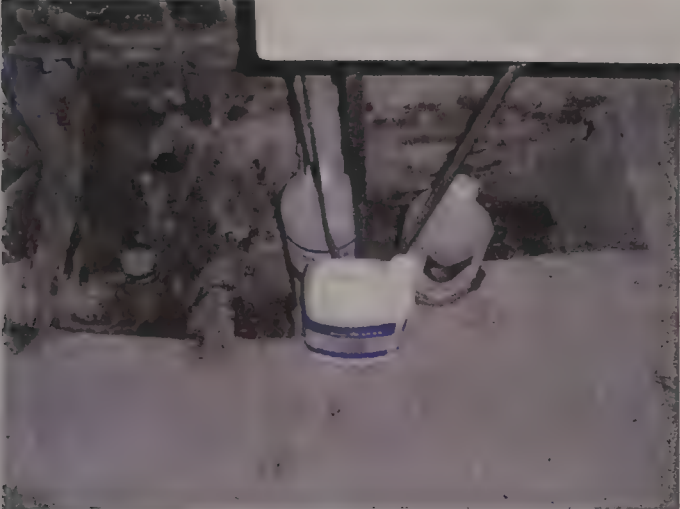
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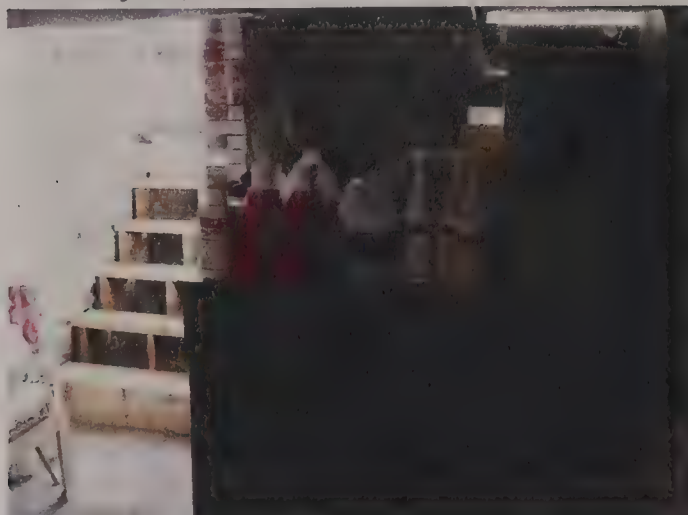
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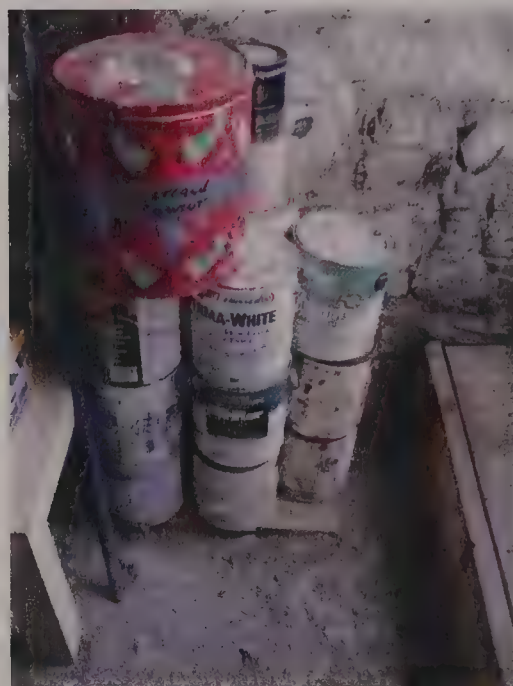
13



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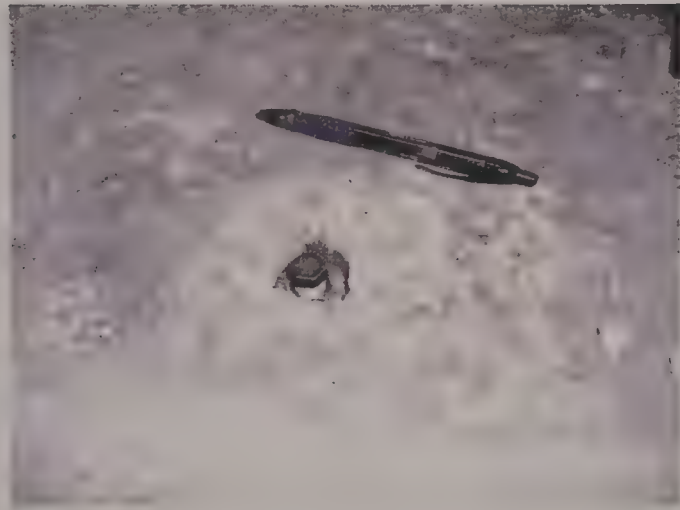
19



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PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **K. Wolfe**

Date: **2/28/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **23 Knowlton Street**

Property Contact: **Don Barry (Owner)**

Contact's Phone: Home: **(617) 625-5120**

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **4**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building: **1 basement window, garage (un-attached)**

Type of Ground Cover Around Outside of Building:

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **798ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **Cinder blocks and Stone**

Integrity: **Concrete with Cracks**

Foundation Integrity: **Concrete with Cracks**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|--|--|---|---|
| <input checked="" type="checkbox"/> Basement sump present? | <input checked="" type="checkbox"/> Sump pump? | <input checked="" type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|--|--|---|---|

Type of heating system:

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input checked="" type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- | | | | |
|--|--|--|--|
| <input type="checkbox"/> Central Air Conditioning | <input type="checkbox"/> Individual Air Conditioning Units | <input type="checkbox"/> Bathroom Ventilation Fans | <input type="checkbox"/> Mechanical Fans |
| <input checked="" type="checkbox"/> Kitchen Range Hood Fan | <input type="checkbox"/> Other: | | |

Type of fuel utilized:

- | | | | |
|---|-----------------------------------|-----------------------------------|---|
| <input checked="" type="checkbox"/> Natural Gas | <input type="checkbox"/> Electric | <input type="checkbox"/> Fuel Oil | <input type="checkbox"/> Wood |
| <input type="checkbox"/> Coal | <input type="checkbox"/> Solar | <input type="checkbox"/> Kerosene | <input type="checkbox"/> Outside (Fresh) Air Intake |

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- | | | |
|--|---|---|
| <input type="checkbox"/> Insulation | <input checked="" type="checkbox"/> Storm Windows | <input type="checkbox"/> Energy Efficient Windows |
| <input type="checkbox"/> Other: storm windows installed year round | | |

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	1 container of wood cleaner	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **No**

PID screening of cracks in wall/ floor and/or wall/floor interface: **No**

PID screening above space above drain sump? **No**

Results of screening / comments:

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? **Yes, Unattached Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

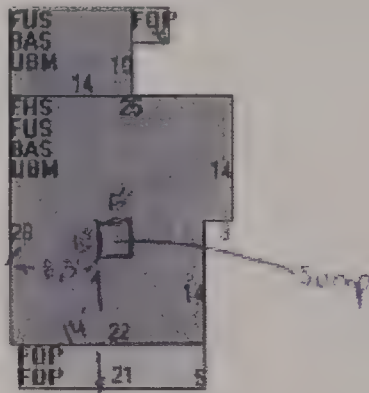
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **23 Knowlton Street**
 Date: **2/28/2007**
 Logged by: **K. Wolfe**

Sub-Slab Monitoring Point IDs:
SS1

Basement Sketch



Ceiling Height: **6'9"**

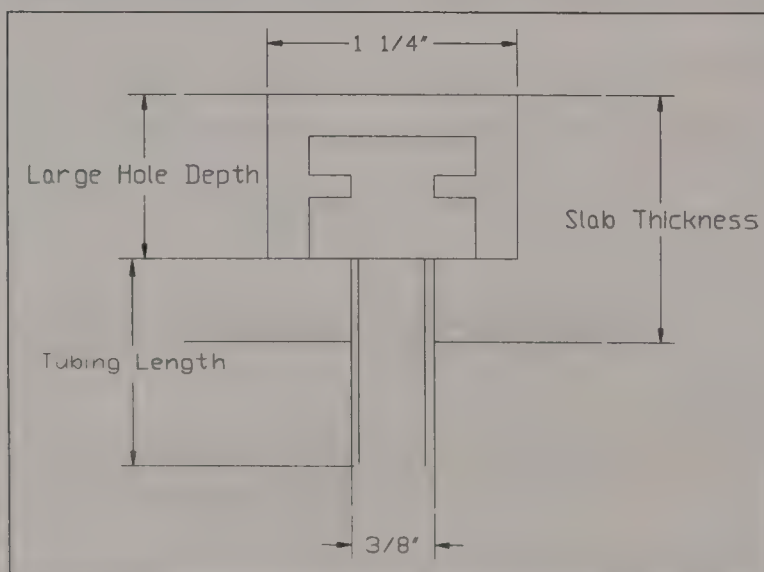
Basement Height Above
 Grade: **2'7"**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:

N/A

Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	4.5"			
Tubing Length:	2"			
Type of Material Under Slab:	silt			
Large Hole Depth:	2"			

Comments:



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
23 Knowlton Street

Sample ID: **SS1**

Date: **02/28/2007**

Sampling personnel: **K. Wolfe**

Summa Canister ID: **M140**

Flow Regulator ID: **MFC057**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **1:41:00 PM**

Sampling Finish Time: **3:04:00 PM**

During Sampling

Time	Vacuum
2:34:00 PM	16

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **32.5 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **6.5 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Photographs taken before sampling? **No** If Yes, what time: Taken by:

Photographs taken after sampling? **No** If Yes, what time: NA Taken by: NA

Comments:

Vacuum prior to sampling: **0.000 in wc**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **0-206 ppb**

Amount of air purged prior to sampling: **~30 liters**

Sub-Slab Installation Photo Log: 23 Knowlton Street (February 28, 2007)

1. Household chemicals on shelves along northwestern wall
2. Household chemicals on shelves along northwestern wall
3. Household chemicals on shelves along northwestern wall
4. Southeastern basement wall
5. Work bench along northwestern wall of basement
6. Central part of the southwestern basement wall
7. Northwest basement wall
8. Patched hole in concrete slab near center of southwestern side of basement
9. Sump pump near center of basement
10. Southern corner of basement
11. Southwest side of residences (exterior view)
12. Southwest corner of residence (exterior view)
13. Northwest corner of residence (exterior view)
14. View of northeast side of the basement ceiling from the northwest
15. View of southwest side of the basement from the southeast
16. Summa canister set-up and sub-slab soil vapor sampling port for sample 045162-23KNOW-SS1



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PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **S. Slater K. Wolfe**
Site Name: **50 Tufts Street, Somerville, MA**

Date: **3/5/2007**
Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **31-33 Knowlton Street**

Property Contact: **Rich Magnan (Owner)**

Contact's Phone: Home: **(617) 628-0677**

Work:

Cell: **7812443360**

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **0**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **grass concrete**

Number of Floors: Below grade: **1** At or above grade: **3**

Basement Size: **1210ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **Poured Concrete**

Integrity: **Concrete with Cracks**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input checked="" type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☐ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☐ Natural Gas
 ☐ Electric
 ☒ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system?

Irrigation/private well?

Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☐ Insulation
 ☐ Storm Windows
 ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	10 cans paint, 3 cans paint thinner in basement	<input type="checkbox"/>
<input checked="" type="checkbox"/> Cleaning solvents	1 container soft scrub in basement	<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	3 containers dish soap- 1st floor	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input checked="" type="checkbox"/> Air fresheners	1 on 1st floor; strong odor	<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **0 ppb for all screened areas**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **2nd floor** Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? ~1000SF

PART VII – ADDITIONAL COMMENTS

8 basement windows. Mentioned (on 1/22/07) that sometimes gets water up through floor

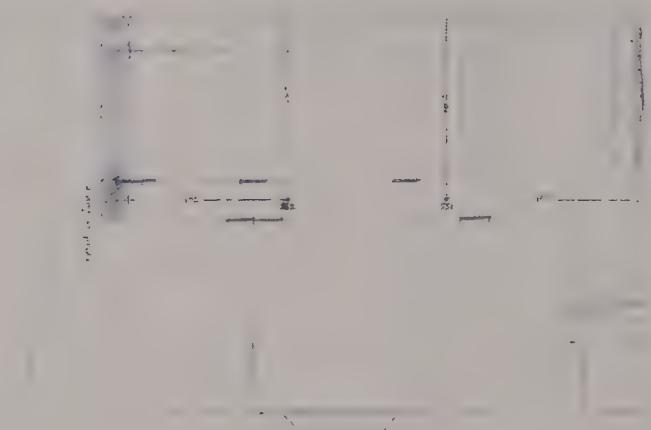
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **31-33 Knowlton Street**
 Date: **3/5/2007**
 Logged by: **S. Slater K. Wolfe**

Sub-Slab Monitoring Point IDs:
SS1 & SS2

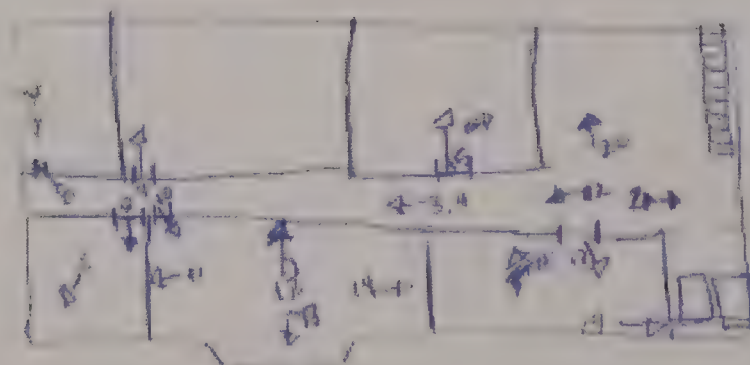
Basement Sketch



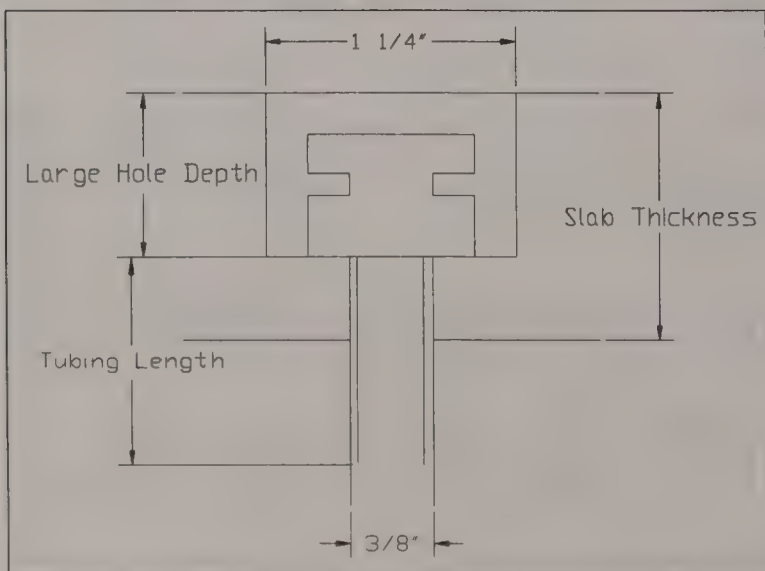
Ceiling Height: **7'3"**
 Basement Height Above
 Grade: **1'4"**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	3"	3"		
Tubing Length:	2 1/2"	2 1/2"		
Type of Material Under Slab:	dry silt	dry silt		
Large Hole Depth:	1 1/2"	2 1/2"		

Comments:



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
31-33 Knowlton Street

Sample ID: **SS2**

Date: **03/05/2007**

Sampling personnel: **K. Wolfe**

Summa Canister ID: **M032**

Flow Regulator ID: **MC089**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **3:26:00 PM**

Sampling Finish Time: **2:20:00 PM**

During Sampling	
Time	Vacuum
3:26:00 PM	28.5

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **28.5 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	42.2	39.7
Barometric Pressure:	29.56	29.61
Prevailing Wind Direction:	NNE	NNE
General Weather Conditions:	overcast	overcast

Photographs taken before sampling? **Yes** If Yes, what time: Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: NA Taken by: NA

Comments: **time: 1600 & 1620 vacuum 13.0 & 4.0. wind down st**

Vacuum prior to sampling: **0.005 in wc ss1 0.000 ss2**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **0 ppb both points**

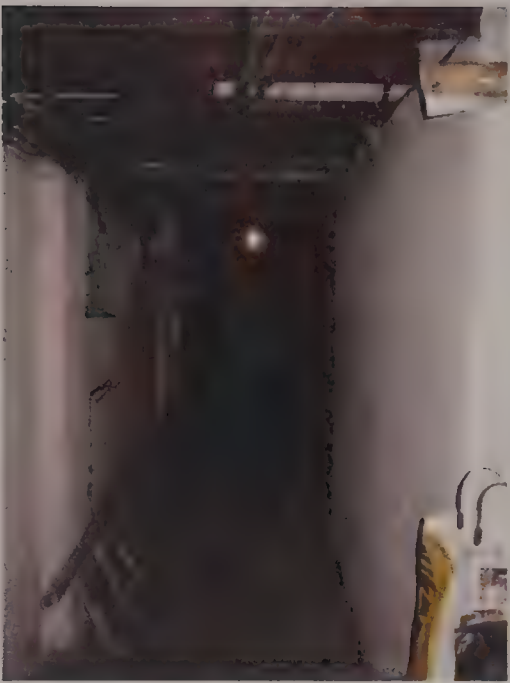
Amount of air purged prior to sampling: **~15 liters**

Sub-Slab Installation Photo Log: 31-33 Knowlton Street (March 5, 2007)

1. Laundry cleaning products along basement wall near the stairs
2. View of hallway from basement entrance
3. Ceiling view of western end of hallway
4. Floor view of western end of hallway
5. Southwest corner of basement
6. Furnace in southwest corner room of basement
7. North corner room of basement
8. North corner room of basement
9. View of north central room from the south
10. View of south central room from the north
11. Household cleaning and maintenance products along west wall of south central room
12. Sink on north wall of south central room
13. South wall of south center room
14. East wall of south central room
15. View of the northeast corner room from the southwest
16. Container of spackling in the northeast room
17. View of southeast room from the northwest
18. North wall of southeast room
19. Furnaces in southeast room
20. Storage space near the stairs in the northeastern corner of the basement
21. Summa canister set-up and sampling port for sub-slab soil vapor sample 045162-31/33KNOW-SS2



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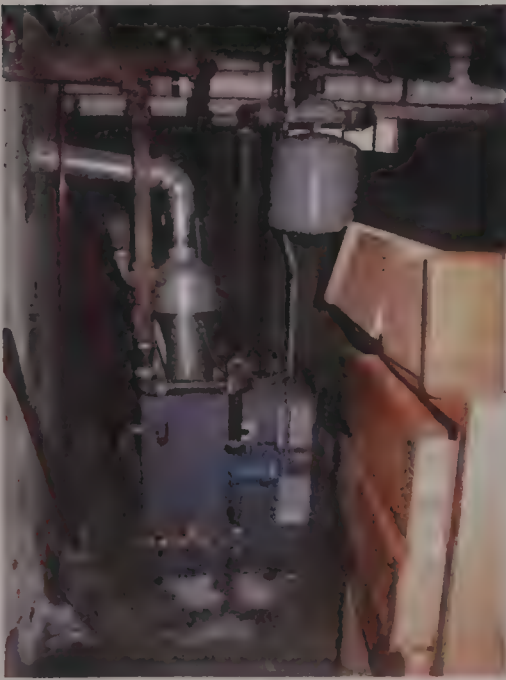
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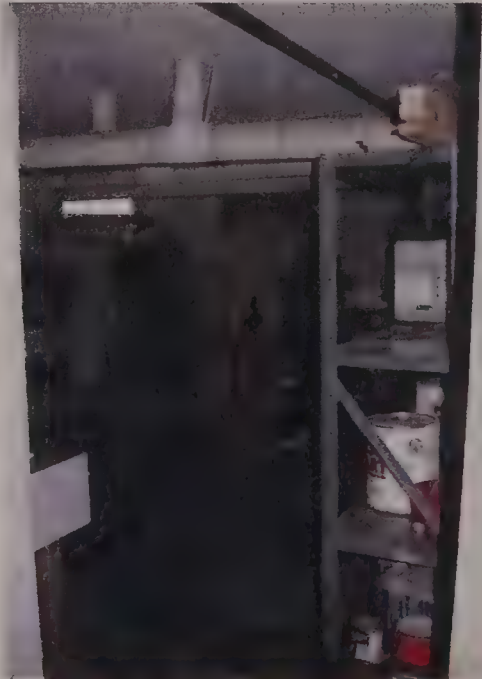
7



8



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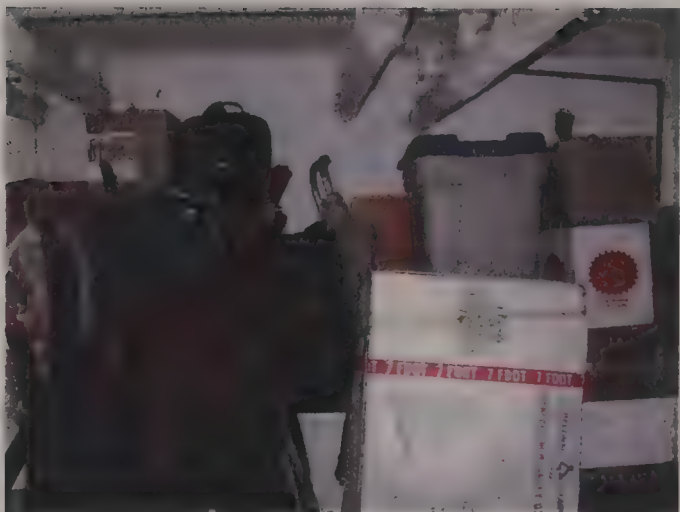
11



12



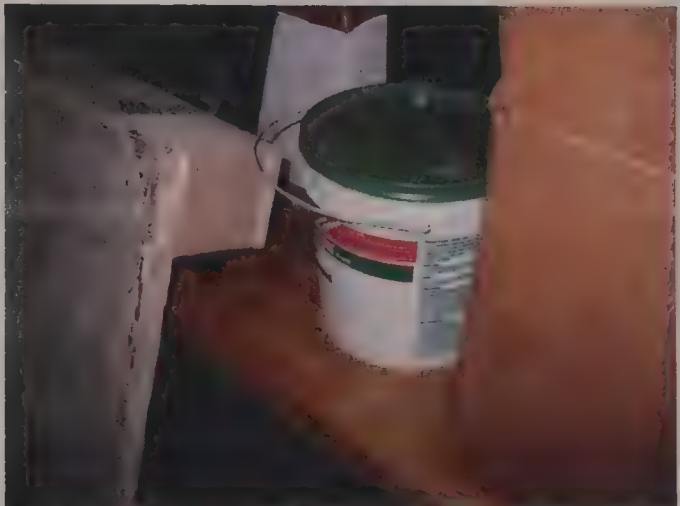
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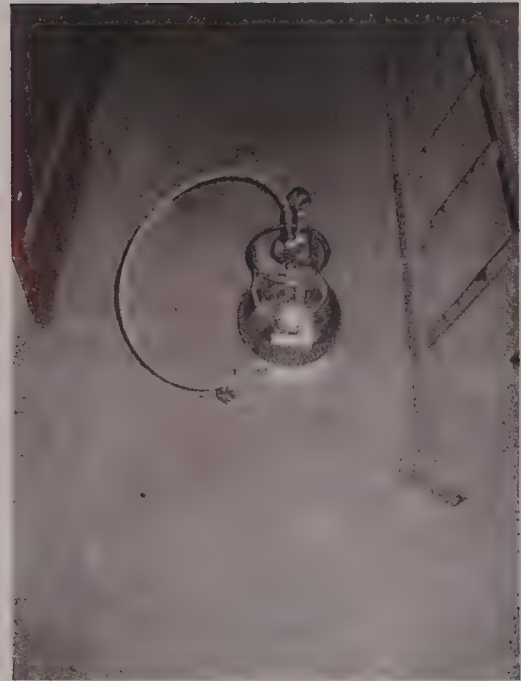
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PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **S. Slater**

Date: **3/28/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **152-154 Glen Street**

Property Contact: **Natalia Farias (Owner)**

Contact's Phone: Home: **(617) 776-7434**

Work:

Cell: **6176230130**

Building Occupants: Children under age 13: **6**

Children age 13-18: **2**

Adults: **9**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Concrete Asphalt**

Number of Floors: Below grade: **1** At or above grade: **3**

Basement Size: **1466ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **Cinder Blocks Stone**

Integrity: **Concrete with Cracks**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Damp**

Flood History/Actions Taken:

<input checked="" type="checkbox"/> Basement sump present?	<input checked="" type="checkbox"/> Sump pump?	<input checked="" type="checkbox"/> Standing water in sump?	<input type="checkbox"/> Product in sump?
--	--	---	---

Type of heating system:

<input type="checkbox"/> Hot Air Circulation	<input type="checkbox"/> Hot Air Radiation	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Steam Radiation
<input type="checkbox"/> Hot Water Radiation	<input type="checkbox"/> Kerosene Heater	<input type="checkbox"/> Electric Baseboard	<input type="checkbox"/> Heat Pump
<input type="checkbox"/> Other:			

Type of ventilation system:

- ☐ Central Air Conditioning
 ☒ Individual Air Conditioning Units
 ☒ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☒ Kitchen Range Hood Fan
 ☐ Other: 3 AC on 3rd, 2 on 2nd, 3 on 1st. Kitch fan on 2nd

Type of fuel utilized:

- ☐ Natural Gas
 ☐ Electric
 ☒ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☐ Insulation
 ☐ Storm Windows
 ☒ Energy Efficient Windows
- ☐ Other: on all 3 floors

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input checked="" type="checkbox"/> Gasoline storage cans	various	<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	various locations around basement	<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank? No	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input checked="" type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Yes**

Results of screening / comments: electric meters=50ppb, gas=1ppb, above drain= 21ppb. Fuel oil (higher closer to ground): 1=205ppb, 2=354ppb showed signs of leakage, 3=150ppb. Furnace near stairs=~80ppb, furnace at front= ~150ppb, open spaces=0-30ppb.

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? **Yes, Unattached Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☒ When were dry-cleaned clothes last brought into the building? **more than 30 days**

Have the occupants ever noticed any unusual odors in the building? ☒ Describe (with location): **"dirty" odor sometimes observed by occupants**

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals? **mulch**

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? **~10% square feet of basement**

PART VII – ADDITIONAL COMMENTS

154 Glen St. 6 kids under 13 on 2nd floor during day care 7-6 Monday through Friday. Foundation cracked? She has not had problems with the basement flooding until several years ago after the school went in. At the time, flooding began and she installed a sump in the basement (152 glen). Flooded and sealed foundation in May 2006, 2 sump pumps (154 glen)

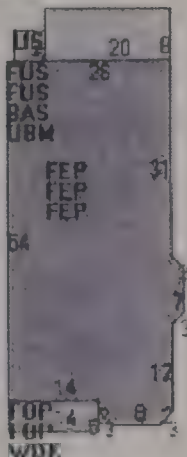
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **152-154 Glen Street**
 Date: **2/28/2007**
 Logged by: **K. Wolfe**

Sub-Slab Monitoring Point IDs:
154 SS1

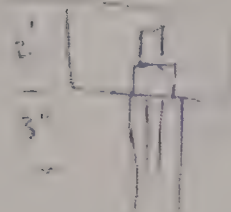
Basement Sketch



ceiling height 7'4"
 basement height above grade 2'1"
 3" slab

Ceiling Height: **7'4"**

Basement Height Above
 Grade: **2'1"**

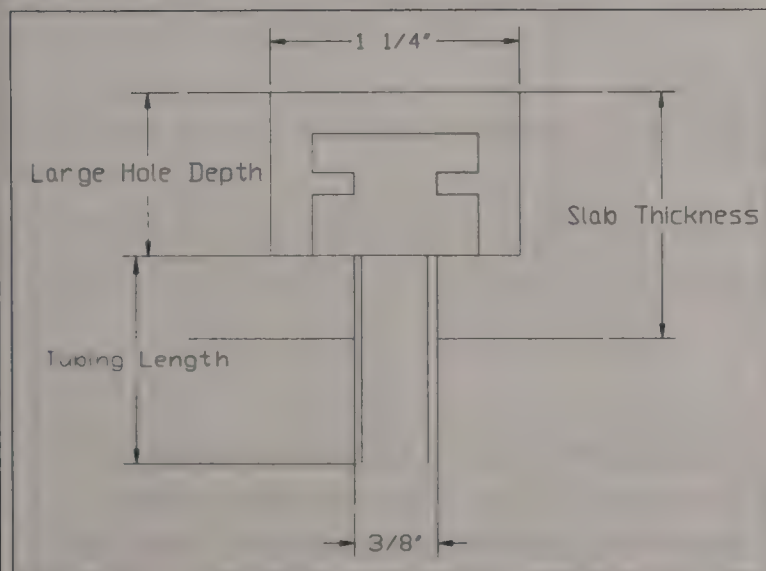


Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:

N/A

Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	3"			
Tubing Length:	3"			
Type of Material Under Slab:				
Large Hole Depth:	2"			

Comments:

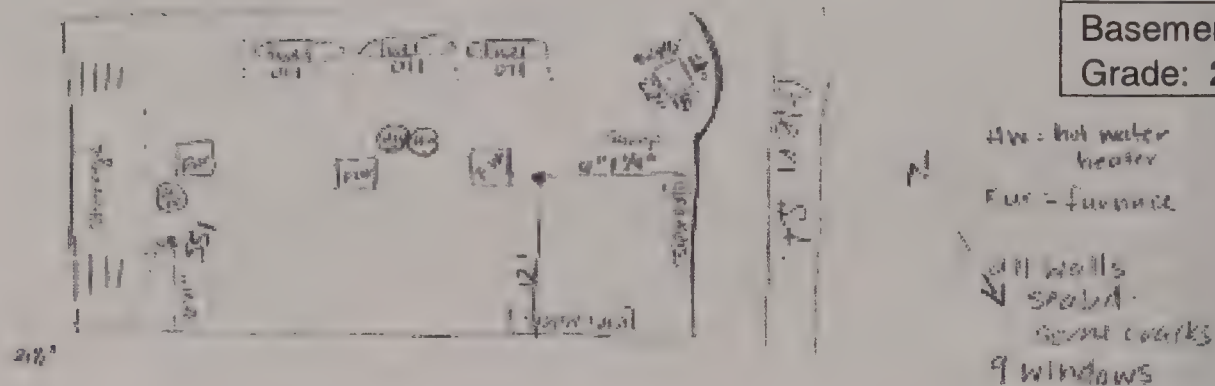
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **152-154 Glen Street**
 Date: **3/28/2007**
 Logged by: **K. Wolfe**

Sub-Slab Monitoring Point IDs:
154 SS1

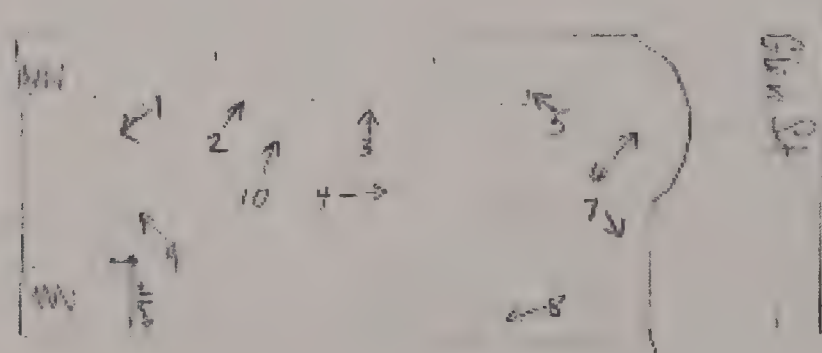
Basement Sketch



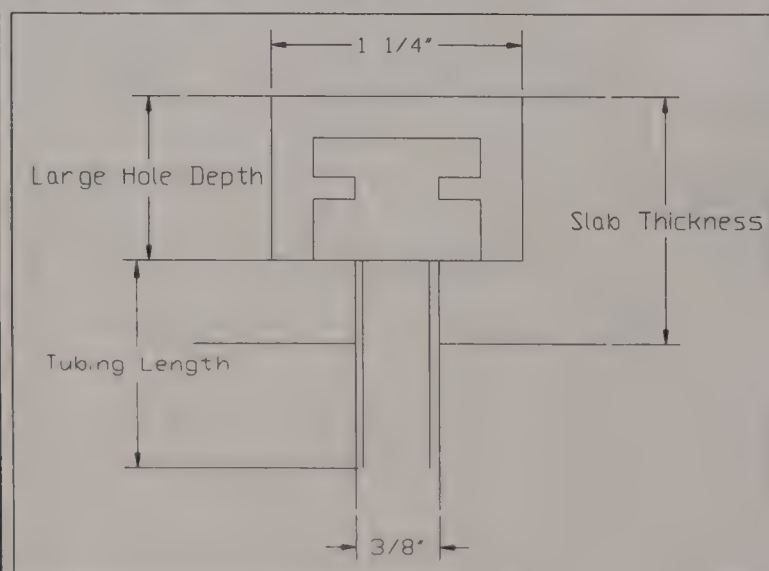
Ceiling Height: **7'4"**
 Basement Height Above Grade: **2'1"**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



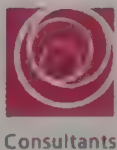
Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	3"			
Tubing Length:	3"			
Type of Material Under Slab:	Wet sand			
Large Hole Depth:	2"			

Comments: **Discovered earlier SS-point had been installed & sampled in Feb. SS2 was filled in with cement. A sampling point was installed in SS1, but not sampled.**

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SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
152-154 Glen Street

Sample ID: **154-Glen SS1**

Date: **02/28/2007**

Sampling personnel: **K. Wolfe**

Summa Canister ID: **M158**

Flow Regulator ID: **MC064**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **2:25:00 PM**

Sampling Finish Time: **3:16:00 PM**

During Sampling

Time

Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Photographs taken before sampling? **No** If Yes, what time: Taken by:

Photographs taken after sampling? **No** If Yes, what time: NA Taken by: NA

Comments: **sump 0 ppb**

Vacuum prior to sampling: **0.000 in wc**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **0 ppb**

Amount of air purged prior to sampling: **~30 liters**

**Sub-Slab Installation Photo Log: 152-154 Glen Street
(February 28 & March 28, 2007)**

1. Fuel oil tank partitions along SE wall (February 28, 2007)
2. Fuel oil tank in rearmost partition (March 28, 2007)
3. Fuel oil tank in middle partition (February 28, 2007)
4. Fuel oil tank in front-most partition (March 28, 2007)
5. Furnace and hot water heaters in center front of basement (March 28, 2007)
6. Sump at front of basement (February 28, 2007)
7. Utility meters at front of basement, towards NE corner (March 28, 2007)
8. Electricity meters along NW wall (March 28, 2007)
9. Furnace and hot water heater at rear center of basement (March 28, 2007)
10. Paints and paint thinners on table in front of middle fuel oil tank partition (March 28, 2007)
11. Exterior West Corner (February 28, 2007)
12. Exterior North Corner (February 28, 2007)
13. Summa canister set-up and sampling port for sub-slab soil vapor sample 045162-154Glen-SS1 (February 28, 2007)



1



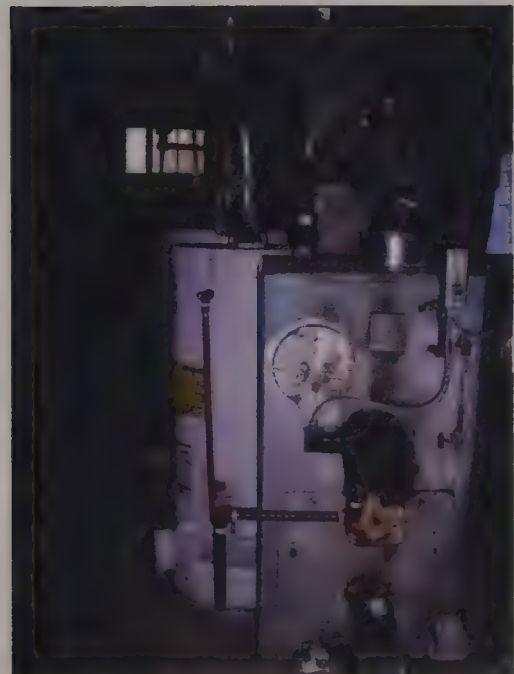
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3



4



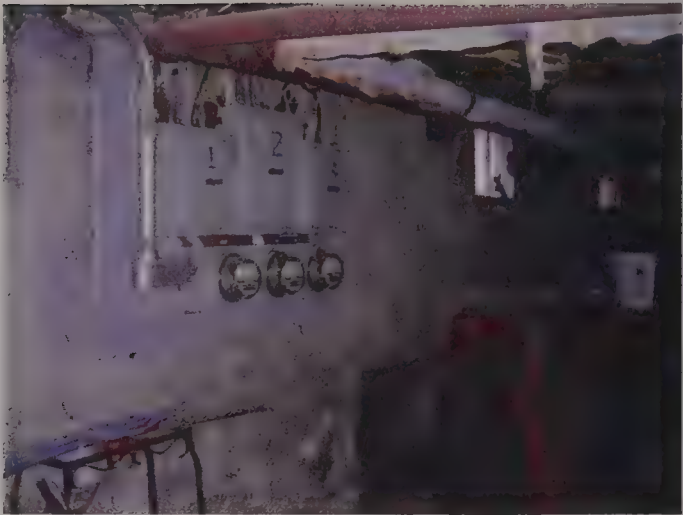
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PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **S. Slater K. Wolfe**
Site Name: **50 Tufts Street, Somerville, MA**

Date: **3/6/2007**
Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **27 Tufts Street**

Property Contact: **Richard Papas (Owner)**

Contact's Phone: Home:

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **3**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Grass and asphalt**

Number of Floors: Below grade: **1** At or above grade: **2.5**

Basement Size: **288ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete w/ aggregate**

Foundation Materials: **Cinder Blocks Stone**

Integrity: **Concrete with Cracks**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

<input checked="" type="checkbox"/> Basement sump present?	<input type="checkbox"/> Sump pump?	<input type="checkbox"/> Standing water in sump?	<input type="checkbox"/> Product in sump?
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Type of heating system:

<input type="checkbox"/> Hot Air Circulation	<input type="checkbox"/> Hot Air Radiation	<input type="checkbox"/> Wood	<input type="checkbox"/> Steam Radiation
<input checked="" type="checkbox"/> Hot Water Radiation	<input type="checkbox"/> Kerosene Heater	<input type="checkbox"/> Electric Baseboard	<input type="checkbox"/> Heat Pump
<input type="checkbox"/> Other:			

Type of ventilation system:

- ☐ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☐ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☒ Natural Gas
 ☐ Electric
 ☒ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☐ Insulation
 ☐ Storm Windows
 ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input checked="" type="checkbox"/> Gasoline storage cans	1 empty can in basement	<input type="checkbox"/>
<input checked="" type="checkbox"/> Gas-powered equipment	1 snowblower, 2 weed wackers in basement	<input type="checkbox"/>
<input checked="" type="checkbox"/> Kerosene storage cans	1 kerosene lamp	<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	10 gal latex paint 2 gal polyurethane 1 can ltfl.	<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input checked="" type="checkbox"/> Insecticides	1 gal in basement	<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank? Yes - Weak	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Yes**

Results of screening / comments: **No PID readings. At time of survey basement had multiple sources of possible contaminants. Mr Papas said he would clean before sampling. Most sources will remain but he agreed not to use any paints or chemical until testing is complete.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? **50% of basement space**

PART VII – ADDITIONAL COMMENTS

On 3/9/07 observed evidence that someone smokes in basement, possibly during a workout. 3/9/07 air purifier turned off serial # 23895. Standing water in sump filled with dirt.

SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **27 Tufts Street**
 Date: **3/6/2007**
 Logged by: **K. Wolfe S. Slater**

Sub-Slab Monitoring Point IDs:
SS1 & SS2

Basement Sketch

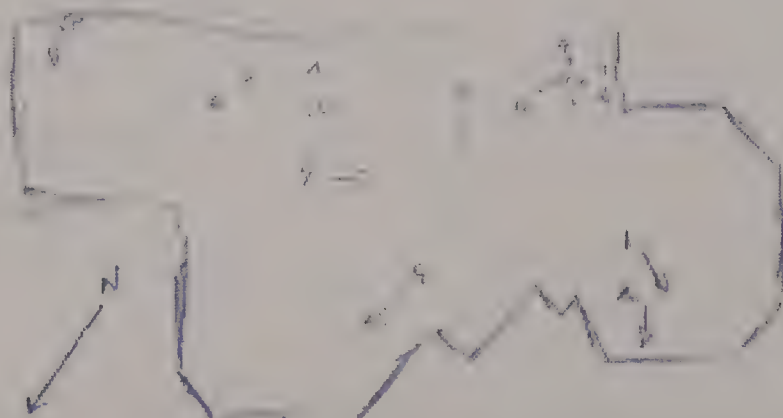


Ceiling Height: **7'2"**

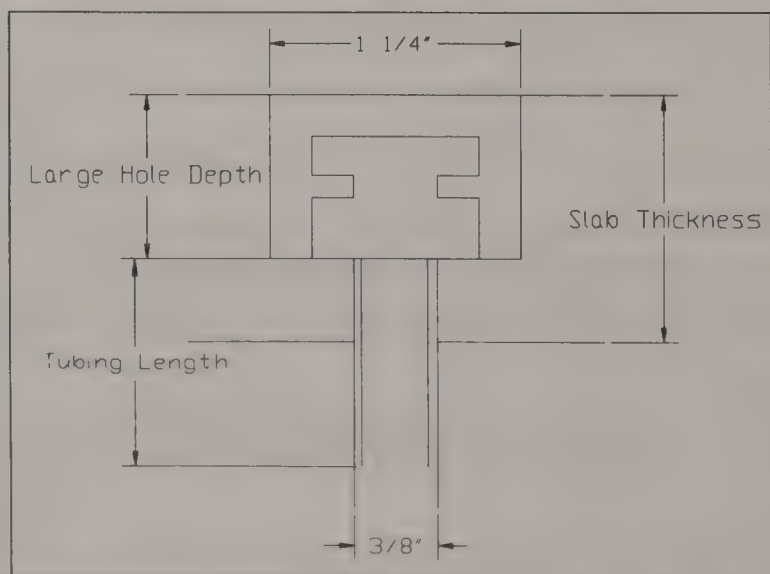
Basement Height Above
 Grade: Not measured

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	3"	3"		
Tubing Length:	2 1/2"	2 1/2"		
Type of Material Under Slab:	brown silt	brown silt		
Large Hole Depth:	2 1/2"	2 1/4"		

Comments: Sampled points later in week due to access issues. 7 basement windows.



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
27 Tufts Street

Sample ID: **SS1**

Date: **03/06/2007**
Sampling personnel: **S. Slater K. Wolfe**

Summa Canister ID: **M097**
Flow Regulator ID: **MC019**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **2:23:00 PM**
Sampling Finish Time: **3:27:00 PM**

During Sampling	
Time	Vacuum
2:44:00 PM	22

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30+in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	41.5	41.0
Barometric Pressure:	30.48	30.45
Prevailing Wind Direction:	calm	calm
General Weather Conditions:	clear	clear

Photographs taken before sampling? **Yes** If Yes, what time: **2:23:00 PM** Taken by: **S. Slater**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **water level appears to have risen during sampling**

Vacuum prior to sampling: **0.005 in wic**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **2150 ppb (before purging), 95ppb (after purging)**

Amount of air purged prior to sampling: **~30 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
27 Tufts Street

Sample ID: **SS2**

Date: **03/06/2007**
Sampling personnel: **S. Slater K. Wolfe**

Summa Canister ID: **M133**
Flow Regulator ID: **MC049**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **2:32:00 PM**
Sampling Finish Time: **3:36:00 PM**

During Sampling	
Time	Vacuum
2:44:00 PM	26.5

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30+in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	41.5	41.0
Barometric Pressure:	30.48	30.45
Prevailing Wind Direction:	calm	calm
General Weather Conditions:	clear	clear

Photographs taken before sampling? **Yes** If Yes, what time: **2:32:00 PM** Taken by: **S. Slater**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **possilbe moisture in tubing near sample port**

Vacuum prior to sampling: **0.007 in wc**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **0 ppb (not purged)**
Amount of air purged prior to sampling: **~30 liters**

Sub-Slab Installation Photo Log: 27 Tufts Street (March 6, 2007)

1. Fuel oil tank in northwest corner of basement
2. Work bench along northern basement wall
3. Workout area in northeast corner of basement
4. Paint in central area of basement
5. Southeastern basement wall
6. Southern corner of basement
7. Cleaning products in southern corner of basement
8. Southern corner of basement
9. Paint in southern corner of basement
10. Furnaces and hot water heater on southeast wall of the basement
11. Eastern corner of the basement
12. Fire extinguishers and container of fertilizer on ledge next to basement stairs
13. Summa canister set-up and sampling port for sub-slab soil vapor sample: 045162-27Tufts-SS1
14. Summa canister set-up and sampling port for sub-slab soil vapor sample: 045162-27Tufts-SS2



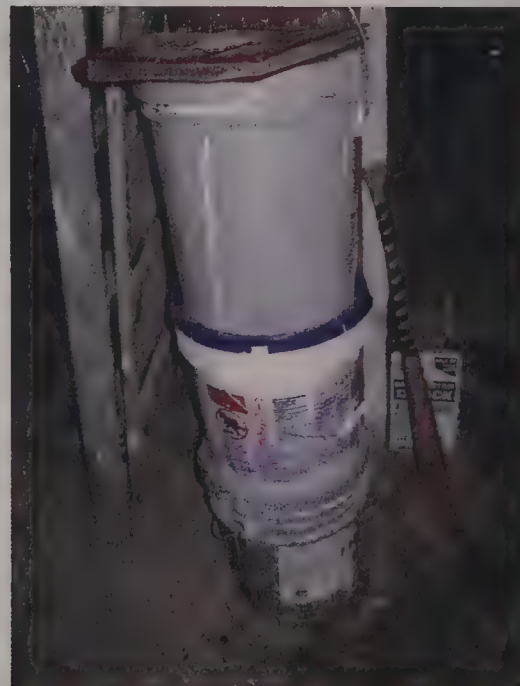
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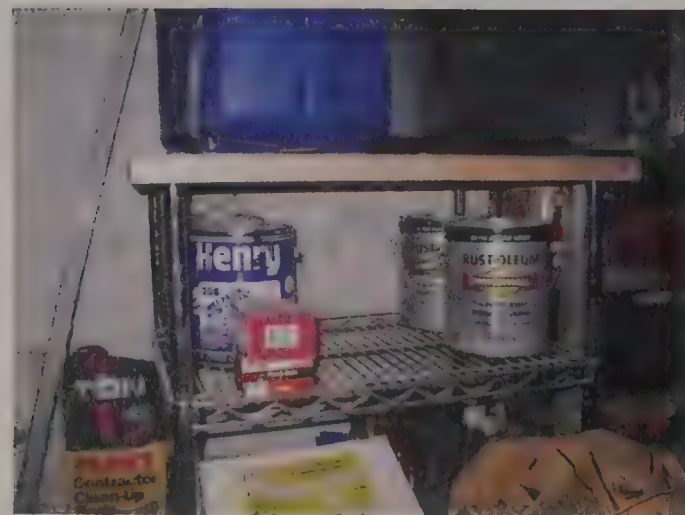
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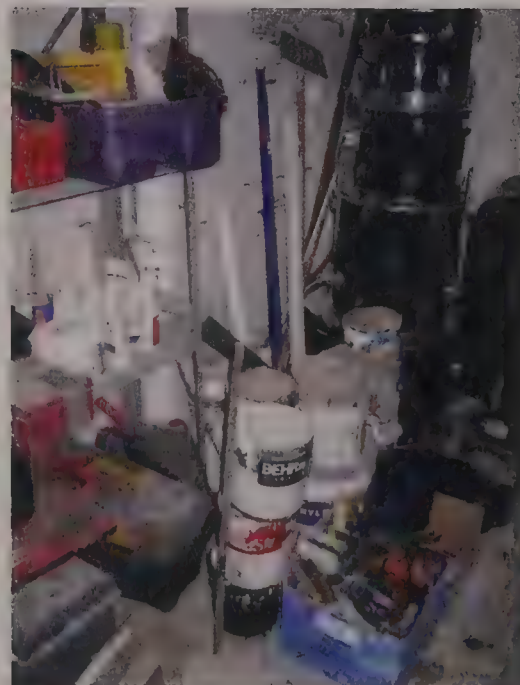
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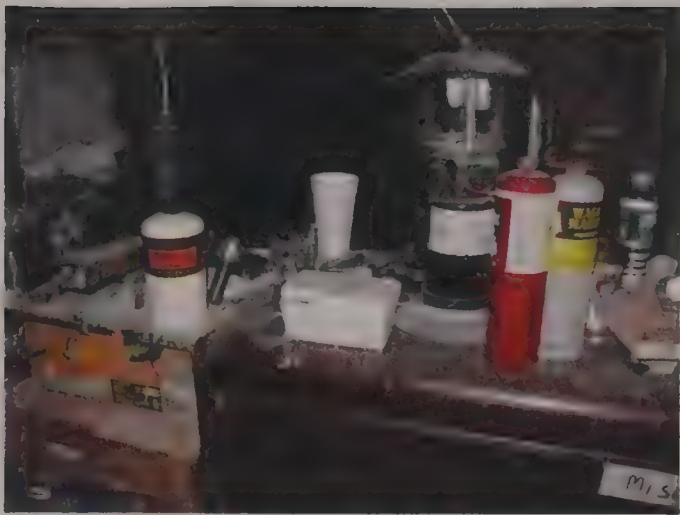
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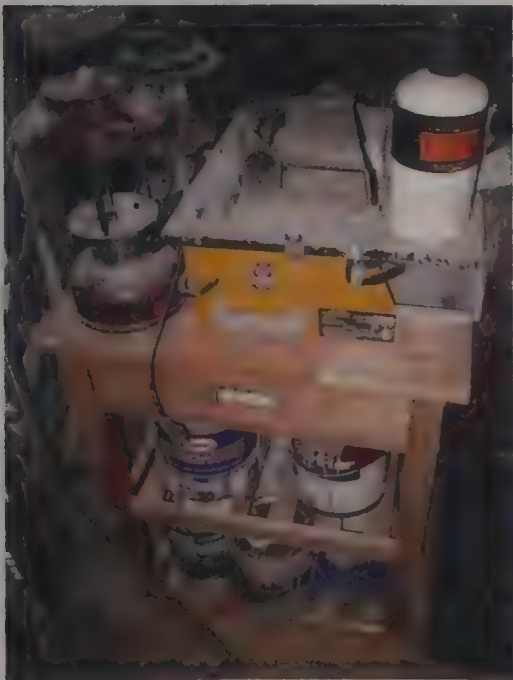
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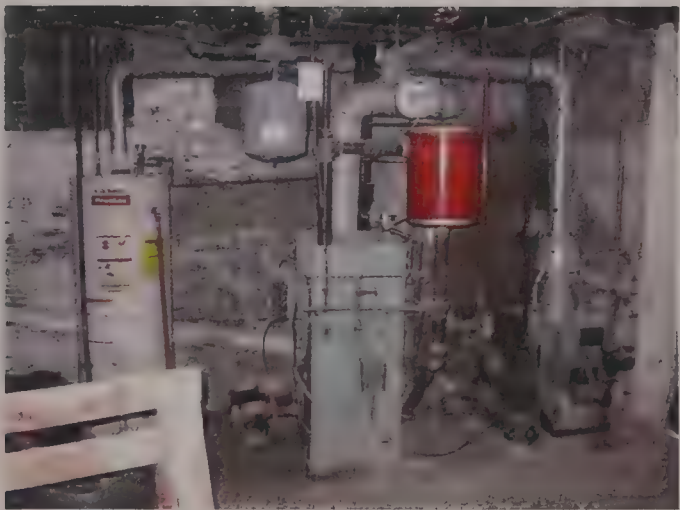
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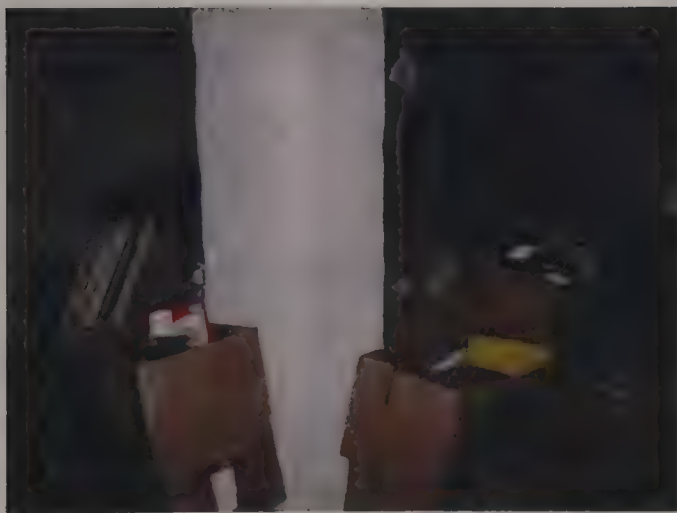
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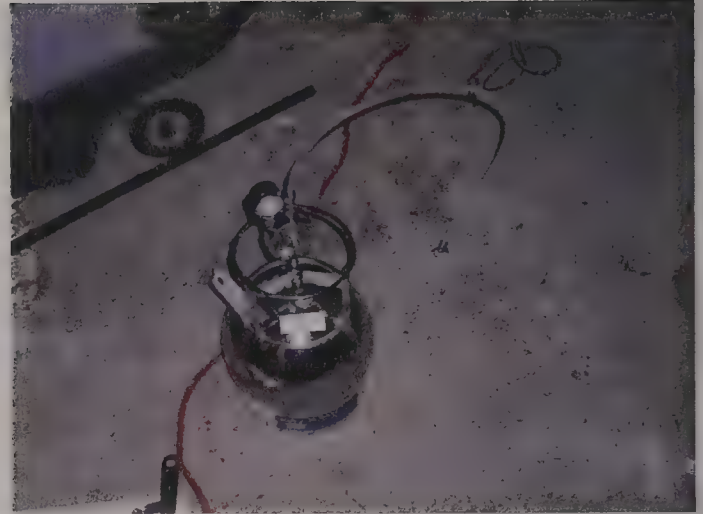
11



12



13



14

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **K. Wolfe S. Slater**

Date: **3/6/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **30-40 Alston Street**

Property Contact: **Tony Lafuente** ()

Contact's Phone: Home:

Work:

Cell: **6175904930**

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **30**

PART II – BUILDING CHARACTERISTICS

Building Type: **Commerical**

Describe Building: **Long commercial building, lofted areas in places**

Type of Ground Cover Around Outside of Building: **concrete and asphalt**

Number of Floors: Below grade: **0** At or above grade: **1**

Basement Size: **18349ft²**

Foundation Type: **Slab on grade**

Basement Floor: **slab**

Foundation Materials:

Integrity: **Concrete with Cracks**

Foundation Integrity:

Basement Use: **Other**

Moisture Conditions In Basement:

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> Hot Air Circulation | <input checked="" type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning ☐ Individual Air Conditioning Units ☐ Bathroom Ventilation Fans ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan ☒ Other: 2,240 sq. ft. of building is air conditioned

Type of fuel utilized:

- ☒ Natural Gas ☐ Electric ☐ Fuel Oil ☐ Wood
- ☐ Coal ☐ Solar ☐ Kerosene ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☐ Insulation ☐ Storm Windows ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input checked="" type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor?

PID screening of cracks in wall/ floor and/or wall/floor interface:

PID screening above space above drain sump?

Results of screening / comments: **Elevated PID readings were not observed during the building survey.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **towards 40 end** Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☒ When were dry-cleaned clothes last brought into the building? **less than 3 wks ago**

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**

Project Number: **045162**

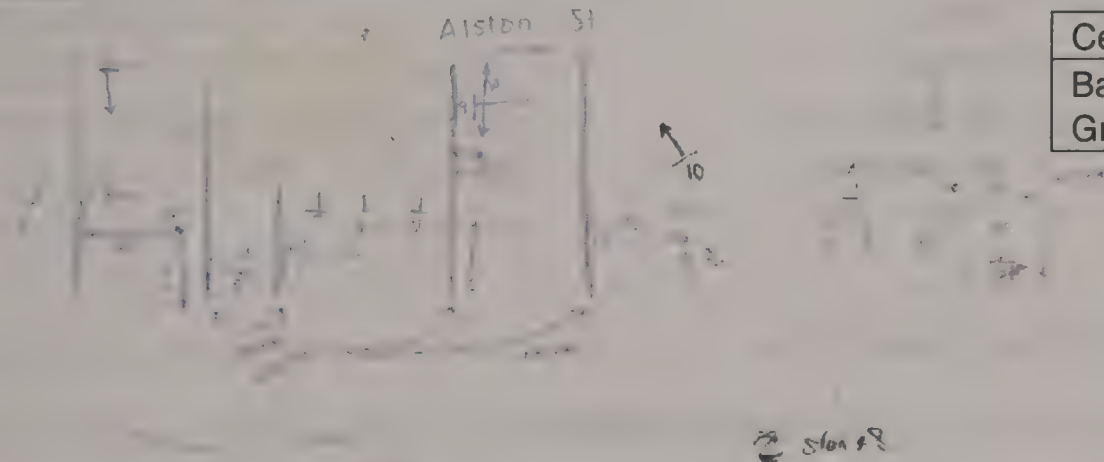
Address: **30-40 Alston Street**

Date: **3/6/07**

Logged by: **K. Wolfe S. Slater**

Sub-Slab Monitoring Point IDs:
SS1-SS6

Basement Sketch



Ceiling Height: **~121**

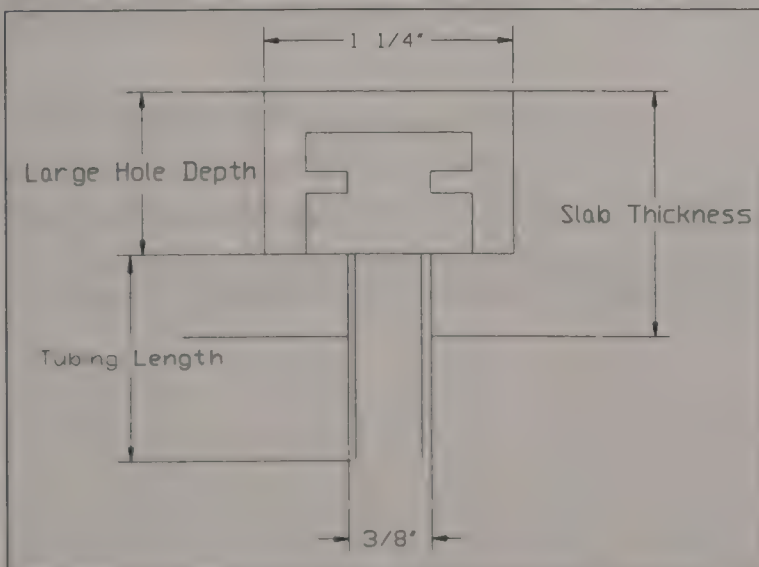
Basement Height Above
Grade: **~121**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:

N/A

Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	7' 1/2"	4"	5"	4"
Tubing Length:				
Type of Material Under Slab:	NR	silt	NR	fine sand
Large Hole Depth:	2 1/4"	3 1/2"	2 1/2"	2"

Comments: SS5: 7"; silt & fine sand; 2 1/4"
SS6: 5"; silt & fine sand; 2 1/2"
NR=No recovery



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
30-40 Alston Street

Sample ID: **40-Alston SS1**

Date: **03/06/2007**
Sampling personnel: **K. Wolfe S. Slater**

Summa Canister ID: **M159**
Flow Regulator ID: **MC050**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **10:51:00 AM**
Sampling Finish Time: **11:52:00 AM**

During Sampling	
Time	Vacuum
11:12:00 AM	21

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **2 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	32.9	28.4
Barometric Pressure:	30.06	30.11
Prevailing Wind Direction:	east	east
General Weather Conditions:	overcast	overcast

Photographs taken before sampling? **Yes** If Yes, what time: Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: NA Taken by: NA

Comments: **photos taken- 3/6/07 During sampling: T 1141 V 5.5**

Vacuum prior to sampling: **0.000 in wc**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **153 ppb**
Amount of air purged prior to sampling: **~15 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
30-40 Alston Street

Sample ID: **40-Alston SS2**

Date: **03/06/2007**
Sampling personnel: **K. Wolfe S. Slater**

Summa Canister ID: **M114**
Flow Regulator ID: **MFC025**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **11:10:00 AM**
Sampling Finish Time: **12:10:00 PM**

During Sampling	
Time	Vacuum
11:45:00 AM	15

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	32.9	28.4
Barometric Pressure:	30.06	30.11
Prevailing Wind Direction:	east	east
General Weather Conditions:	overcast	overcast

Photographs taken before sampling? **Yes** If Yes, what time: Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: NA Taken by: NA

Comments: **photos taken 3/6/07**

Vacuum prior to sampling: **0.000 in wc**
Ambient air concentration: **54 ppb**
Soil gas concentration prior to sampling: **826 ppb**
Amount of air purged prior to sampling: **~15 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
30-40 Alston Street

Sample ID: **40-Alston SS3**

Date: **03/06/2007**
Sampling personnel: **K. Wolfe S. Slater**

Summa Canister ID: **M060**
Flow Regulator ID: **MC003**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **12:26:00 PM**
Sampling Finish Time: **12:23:00 PM**

During Sampling	
Time	Vacuum
11:48:00 AM	20

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	32.9	28.4
Barometric Pressure:	30.06	30.11
Prevailing Wind Direction:	east	east
General Weather Conditions:	overcast	overcast

Photographs taken before sampling? **Yes** If Yes, what time: Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: NA Taken by: NA

Comments: **photos taken 3/6/07.**

Vacuum prior to sampling: **0.000 in wc**
Ambient air concentration: **126 ppb**
Soil gas concentration prior to sampling: **199 ppb**
Amount of air purged prior to sampling: **5 min**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
30-40 Alston Street

Sample ID: **40-Alston SS4**

Date: **03/06/2007**
Sampling personnel: **K. Wolfe S. Slater**

Summa Canister ID: **M129**
Flow Regulator ID: **MFC005**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **11:40:00 AM**
Sampling Finish Time: **12:43:00 PM**

During Sampling	
Time	Vacuum
12:02:00 PM	22.5

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **2 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	32.9	28.4
Barometric Pressure:	30.06	30.11
Prevailing Wind Direction:	east	east
General Weather Conditions:	overcast	overcast

Photographs taken before sampling? **Yes** If Yes, what time: Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: NA Taken by: NA

Comments: **photos taken 3/6/07**

Vacuum prior to sampling: **0.010 in wc**
Ambient air concentration: **1304 ppb**
Soil gas concentration prior to sampling: **405 ppb**
Amount of air purged prior to sampling: **~15 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
30-40 Alston Street

Sample ID: **40-Alston SS5**

Date: **03/06/2007**
Sampling personnel: **K. Wolfe S. Slater**

Summa Canister ID: **M050**
Flow Regulator ID: **MC076**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **12:40:00 PM**
Sampling Finish Time: **1:40:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	32.9	28.4
Barometric Pressure:	30.06	30.11
Prevailing Wind Direction:	east	east
General Weather Conditions:	overcast	overcast

Photographs taken before sampling? **Yes** If Yes, what time: Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: NA Taken by: NA

Comments: **photos taken 3/6/07**

Vacuum prior to sampling: **0.017 in wc**
Ambient air concentration: **709 ppb**
Soil gas concentration prior to sampling: **134 ppb**
Amount of air purged prior to sampling: **~15 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
30-40 Alston Street

Sample ID: **40-Alston SS6**

Date: **03/06/2007**
Sampling personnel: **K. Wolfe S. Slater**

Summa Canister ID: **M067**
Flow Regulator ID: **MC056**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **1:03:00 PM**
Sampling Finish Time: **2:02:00 PM**

During Sampling	
Time	Vacuum
1:38:00 PM	13

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	32.9	28.4
Barometric Pressure:	30.06	30.11
Prevailing Wind Direction:	east	east
General Weather Conditions:	overcast	overcast

Photographs taken before sampling? **Yes** If Yes, what time: Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: NA Taken by: NA

Comments: **photos taken 3/6/07**

Vacuum prior to sampling: **0.003 in wc**
Ambient air concentration: **35 ppb**
Soil gas concentration prior to sampling: **119 ppb**
Amount of air purged prior to sampling: **~15 liters**

Sub-Slab Installation Photo Log: 30-40 Alston Street (March 6, 2007)

40 Alston Street

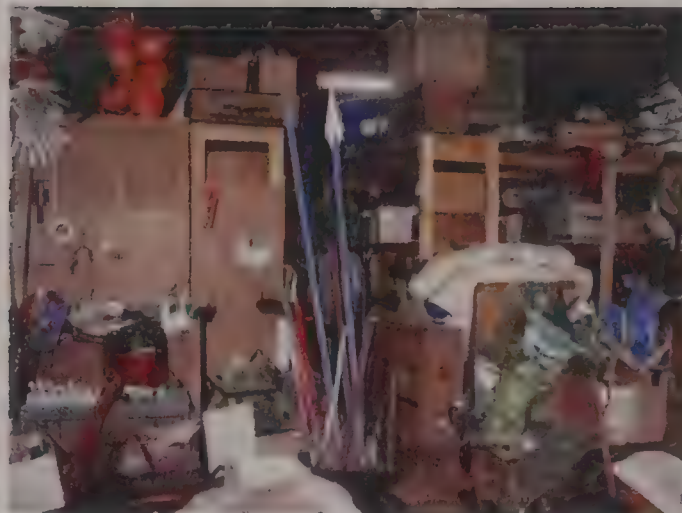
1. Northeast wall of building
2. View of various props and set items in southeastern part of the building from the southeast
3. View of various props and set items in southeastern part of building from the southeast
4. Costumes in SE central portion of building
5. Southeast central portion of building
6. Working costume staging area and "Costume Works" office space
7. Work tables and sewing machines in "Costume Works"
8. Work tables and sewing machines in "Costume Works"
9. Break room and dying area in "Costume Works"

30 Alston Street

10. Southwest corner of "Flagraphics"
11. Southeastern wall of "Flagraphics" and printer room
12. "Flagraphics" sewing machines and staging area
13. View of northwest corner of the building from the northeast
14. Summa canister and sampling port for sub-slab soil vapor sample 045162-40Alston-SS1
15. Summa canister and sampling port for sub-slab soil vapor sample 045162-40Alston-SS2
16. Summa canister and sampling port for sub-slab soil vapor sample 045162-40Alston-SS3
17. Summa canister and sampling port for sub-slab soil vapor sample 045162-30Alston-SS5
18. Summa canister and sampling port for sub-slab soil vapor sample 045162-40Alston-SS6



1



2



3



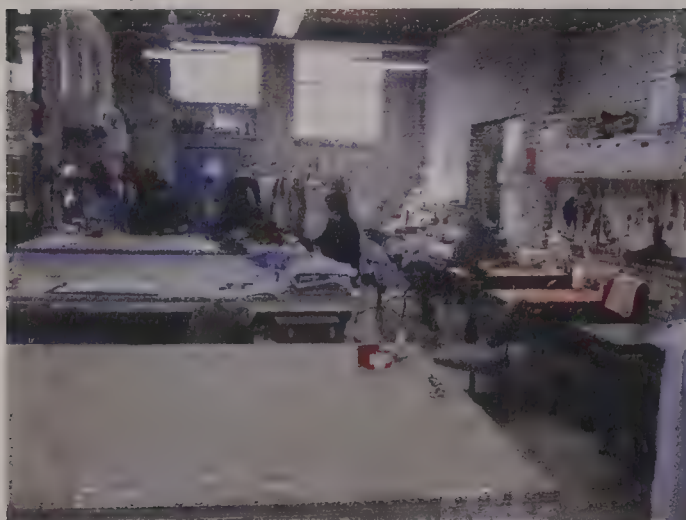
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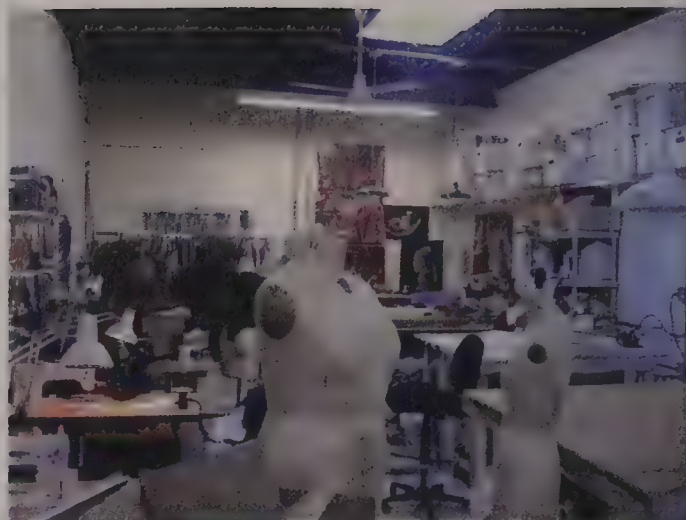
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6



7



8



9



10



11



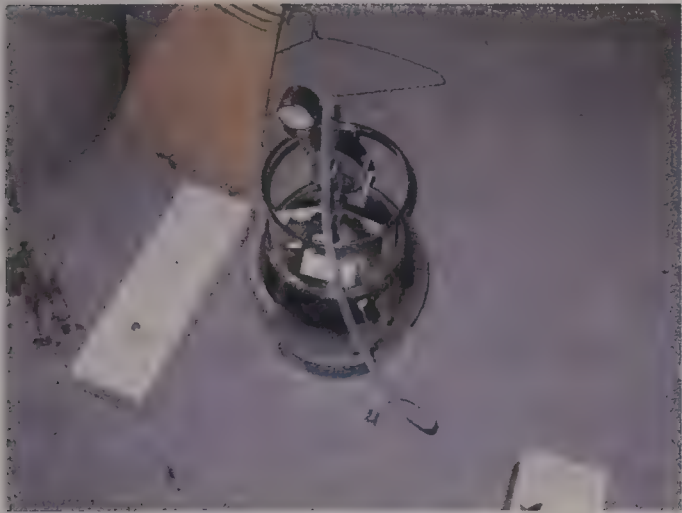
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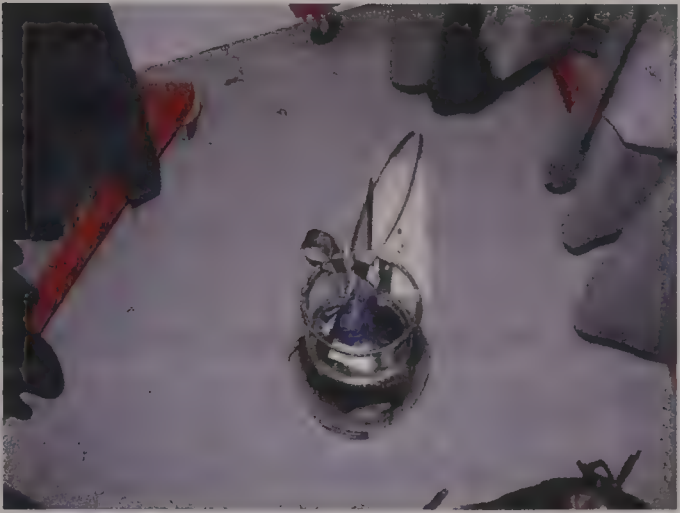
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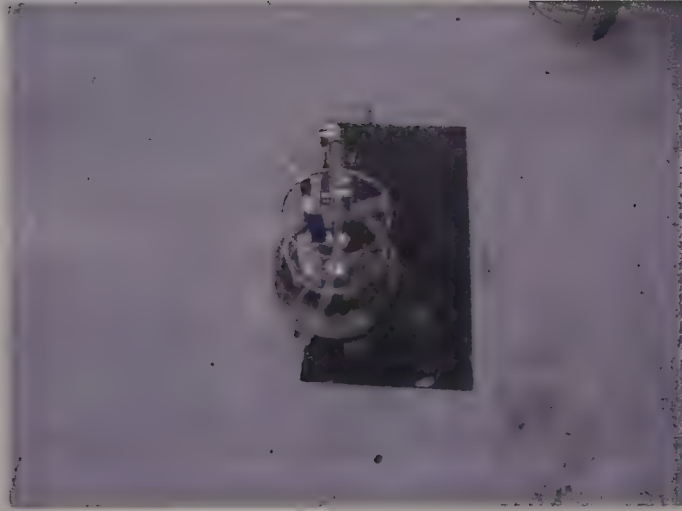
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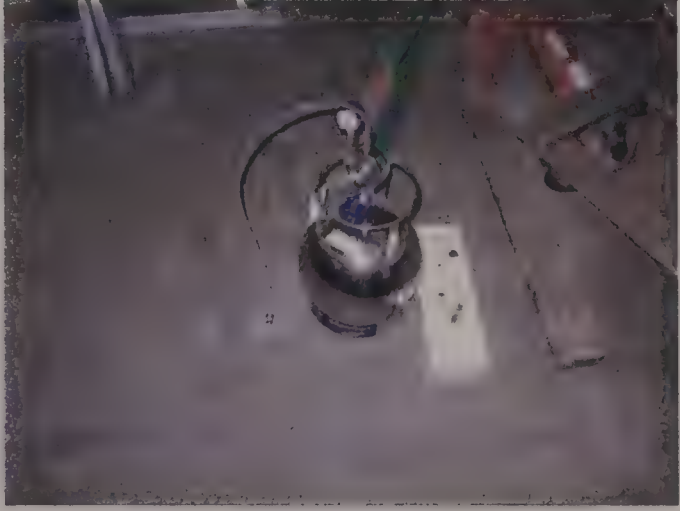
15



16



17



18

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **K. Wolfe**

Date: **3/9/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **27 Knowlton Street**

Property Contact: **Carol Bodkin (Owner)**

Contact's Phone: Home: **(617) 628-7757**

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **2**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Concrete and asphalt**

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **895ft²**

Foundation Type: **Finished Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **bricks & mortar**

Integrity: **Concrete with Cracks**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **storage & recreation**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|--|-------------------------------------|--|---|
| <input checked="" type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|--|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input checked="" type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- | | | | |
|---|--|--|--|
| <input type="checkbox"/> Central Air Conditioning | <input type="checkbox"/> Individual Air Conditioning Units | <input type="checkbox"/> Bathroom Ventilation Fans | <input type="checkbox"/> Mechanical Fans |
| <input type="checkbox"/> Kitchen Range Hood Fan | <input type="checkbox"/> Other: none | | |

Type of fuel utilized:

- | | | | |
|---|-----------------------------------|-----------------------------------|---|
| <input checked="" type="checkbox"/> Natural Gas | <input type="checkbox"/> Electric | <input type="checkbox"/> Fuel Oil | <input type="checkbox"/> Wood |
| <input type="checkbox"/> Coal | <input type="checkbox"/> Solar | <input type="checkbox"/> Kerosene | <input type="checkbox"/> Outside (Fresh) Air Intake |

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- | | | |
|-------------------------------------|--|---|
| <input type="checkbox"/> Insulation | <input type="checkbox"/> Storm Windows | <input type="checkbox"/> Energy Efficient Windows |
| <input type="checkbox"/> Other: | | |

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **No**

Results of screening / comments: **0.0 ppm**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? **~30 % full**

PART VII – ADDITIONAL COMMENTS

Carol's son preferred that we didn't enter, measure, drill or photo the finished area behind closed doors. Survey refers to unfinished area only.

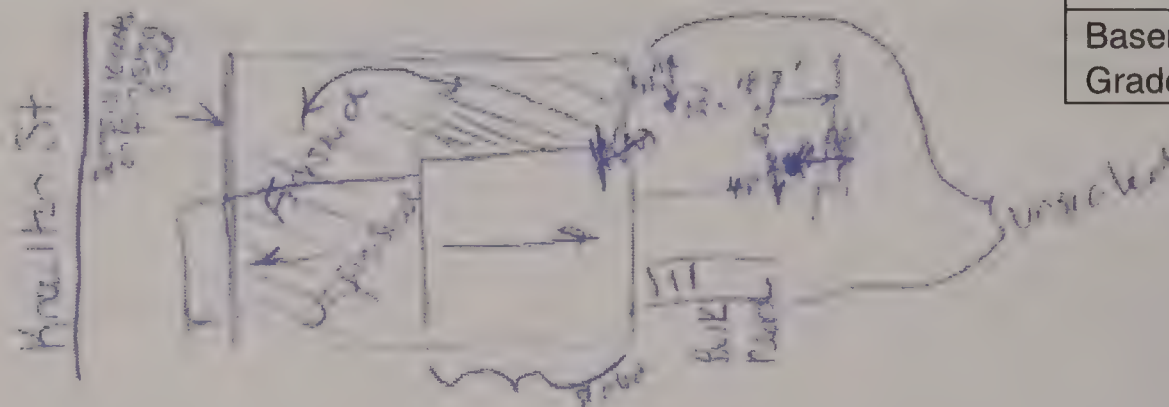
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **27 Knowlton Street**
 Date: **3/9/2007**
 Logged by: **K. Wolfe**

Sub-Slab Monitoring Point IDs:
SS1 & SS2

Basement Sketch

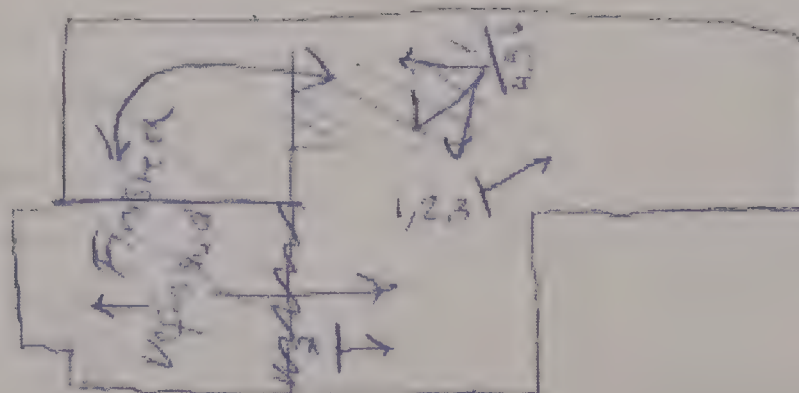


Ceiling Height: **7'2"**

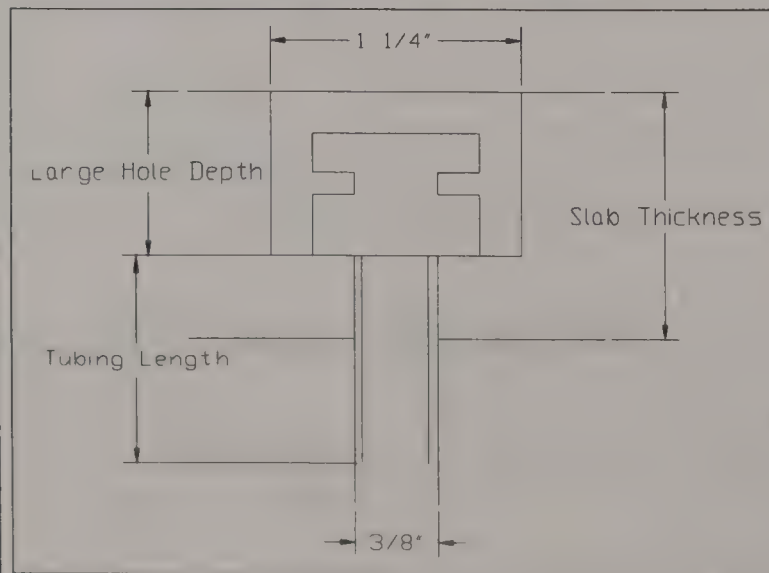
Basement Height Above
 Grade: **2'**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	3"	3"		
Tubing Length:	2"	1 1/2"		
Type of Material Under Slab:	silt	silt		
Large Hole Depth:	2"	2 1/2"		

Comments:



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
27 Knowlton Street

Sample ID: **SS1**

Date: **03/09/2007**

Sampling personnel: **K. Wolfe**

Summa Canister ID: **M102**

Flow Regulator ID: **MFC014**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **2:51:00 PM**

Sampling Finish Time: **9:05:00 AM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **30 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

41.6

Not Measured

Barometric Pressure:

30.47

Prevailing Wind Direction:

none

General Weather Conditions:

partly cloudy

Photographs taken before sampling? **Yes** If Yes, what time: **2:51:00 PM** Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **regulator malfunction@403 changed regulator; MC023**

Vacuum prior to sampling: **0.000**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **0 ppb**

Amount of air purged prior to sampling: **~30 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
27 Knowlton Street

Sample ID: **SS2**

Date: **03/09/2007**
Sampling personnel: **K. Wolfe**

Summa Canister ID: **M135**
Flow Regulator ID: **M096**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **3:03:00 PM**
Sampling Finish Time: **9:03:00 AM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	41.6	Not Measured
Barometric Pressure:	30.47	
Prevailing Wind Direction:	none	
General Weather Conditions:	partly cloudy	

Photographs taken before sampling? **Yes** If Yes, what time: **3:03:00 PM** Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **@ 1605 stopped regulator used air pump & restarted**

Vacuum prior to sampling: **-0.006**
Ambient air concentration: **0.0 ppb**
Soil gas concentration prior to sampling: **0 ppb**
Amount of air purged prior to sampling: **~30 liters**

Sub-Slab Installation Photo Log: 27 Knowlton Street (March 9, 2007)

1. Southeast corner of basement
2. Floor of southeast corner of basement
3. Ceiling of southeast corner of basement
4. Northern wall of basement
5. West corner of basement
6. Southwest corner of basement
7. Ceiling of southeast corner of the basement
8. Summa canister set-up and sampling port for 045162-27KNOW-SS1
9. Summa canister set-up and sampling port for 045162-27KNOW-SS2



1



2



3



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7



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9

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **K. Wolfe**

Date: **3/12/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **153-155 Glen Street**

Property Contact: **Katherina Cook (Owner)**

Contact's Phone: Home: **(617) 776-8111**

Work: **9786676728**

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **1**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Grass and concrete**

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **1104ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete w/ aggregate**

Foundation Materials: **brick & mortar**

Integrity: **Concrete with Cracks**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

<input checked="" type="checkbox"/> Basement sump present?	<input checked="" type="checkbox"/> Sump pump?	<input checked="" type="checkbox"/> Standing water in sump?	<input type="checkbox"/> Product in sump?
--	--	---	---

Type of heating system:

<input type="checkbox"/> Hot Air Circulation	<input type="checkbox"/> Hot Air Radiation	<input type="checkbox"/> Wood	<input type="checkbox"/> Steam Radiation
<input checked="" type="checkbox"/> Hot Water Radiation	<input type="checkbox"/> Kerosene Heater	<input type="checkbox"/> Electric Baseboard	<input type="checkbox"/> Heat Pump
<input type="checkbox"/> Other:			

Type of ventilation system:

- | | | | |
|---|--|--|--|
| <input type="checkbox"/> Central Air Conditioning | <input type="checkbox"/> Individual Air Conditioning Units | <input type="checkbox"/> Bathroom Ventilation Fans | <input type="checkbox"/> Mechanical Fans |
| <input type="checkbox"/> Kitchen Range Hood Fan | <input type="checkbox"/> Other: | | |

Type of fuel utilized:

- | | | | |
|--------------------------------------|-----------------------------------|--|---|
| <input type="checkbox"/> Natural Gas | <input type="checkbox"/> Electric | <input checked="" type="checkbox"/> Fuel Oil | <input type="checkbox"/> Wood |
| <input type="checkbox"/> Coal | <input type="checkbox"/> Solar | <input type="checkbox"/> Kerosene | <input type="checkbox"/> Outside (Fresh) Air Intake |

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- | | | |
|-------------------------------------|--|---|
| <input type="checkbox"/> Insulation | <input type="checkbox"/> Storm Windows | <input type="checkbox"/> Energy Efficient Windows |
| <input type="checkbox"/> Other: | | |

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	6 containers	<input type="checkbox"/>
<input checked="" type="checkbox"/> Cleaning solvents	5 containers	<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Yes**

Results of screening / comments: **0.0 ppb in all locations**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☒ Describe (with location):
past spill; exact time and location unknown

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

Contact daughter- kay 978 667-6728

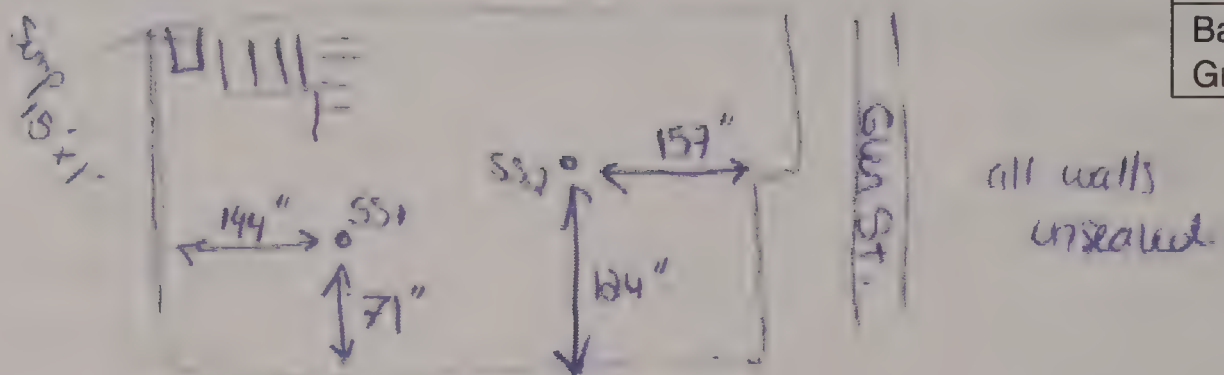
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **153-155 Glen Street**
 Date: **3/12/2007**
 Logged by: **K. Wolfe**

Sub-Slab Monitoring Point IDs:
SS1 & SS2

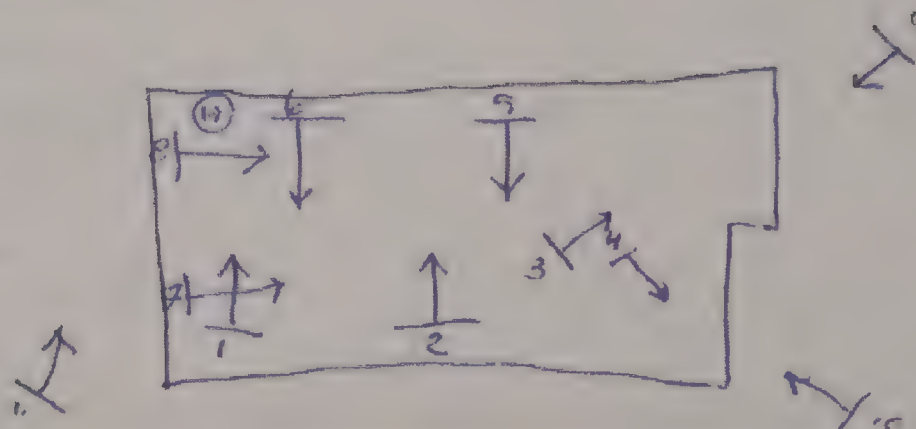
Basement Sketch



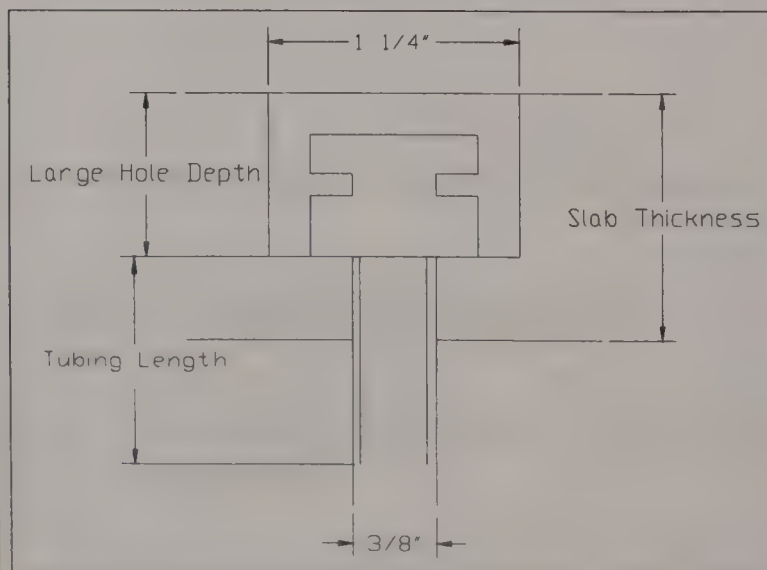
Ceiling Height: **7'5"**
 Basement Height Above
 Grade: **33"**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	3"	3"		
Tubing Length:	2.5"	2.5"		
Type of Material Under Slab:	silt	silt		
Large Hole Depth:	1.5"	1.5"		

Comments: 5 basement windows



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
153-155 Glen Street

Sample ID: **153-Glen-SS1**

Date: **03/12/2007**

Sampling personnel: **K. Wolfe**

Summa Canister ID: **M089**

Flow Regulator ID: **MC063**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **11:09:00 AM**

Sampling Finish Time: **12:10:00 PM**

During Sampling	
Time	Vacuum
11:39:00 AM	16.5

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **28.5 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	58.8	62.4
Barometric Pressure:	30.27	30.26
Prevailing Wind Direction:	none	none
General Weather Conditions:	sunny	sunny

Photographs taken before sampling? **Yes** If Yes, what time: **11:09:00 AM** Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **0.000 in wc**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **0 ppb**

Amount of air purged prior to sampling: **~25 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
153-155 Glen Street

Sample ID: **153-Glen-SS2**

Date: **03/12/2007**

Sampling personnel: **K. Wolfe**

Summa Canister ID: **M019**

Flow Regulator ID: **MC054**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **11:19:00 AM**

Sampling Finish Time: **12:12:00 PM**

During Sampling	
Time	Vacuum
11:40:00 AM	20.5

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	58.8	62.4
Barometric Pressure:	30.27	30.26
Prevailing Wind Direction:	none	none
General Weather Conditions:	sunny	sunny

Photographs taken before sampling? **Yes** If Yes, what time: **11:19:00 AM** Taken by:

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **0.000 in wc**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **0 ppb**

Amount of air purged prior to sampling: **~25 liters**

Sub-Slab Installation Photo Log: 153-155 Glen Street (March 12, 2007)

1. Stairs along northeastern basement wall
2. Center of the northeastern basement wall
3. East corner of basement
4. South corner of basement
5. View of the furnace and water heater from the northwest
6. Laundry area along the southwestern basement wall
7. Ceiling of southwestern part of the basement
8. Ceiling of the northeastern part of the basement
9. Exterior view of the eastern corner of the residence
10. Exterior view of the southern corner of the residence
11. Exterior view of the western corner of the residence
12. Basement sump pump
13. Summa canister set-up and sampling port for sub-slab soil vapor sample 045162-153Glen-SS1
14. Summa canister set-up and sampling port of sub-slab soil vapor sample 045162-153Glen-SS2.



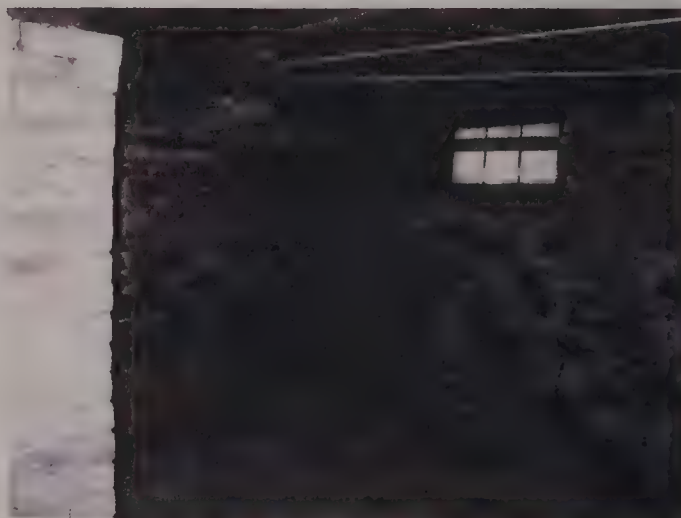
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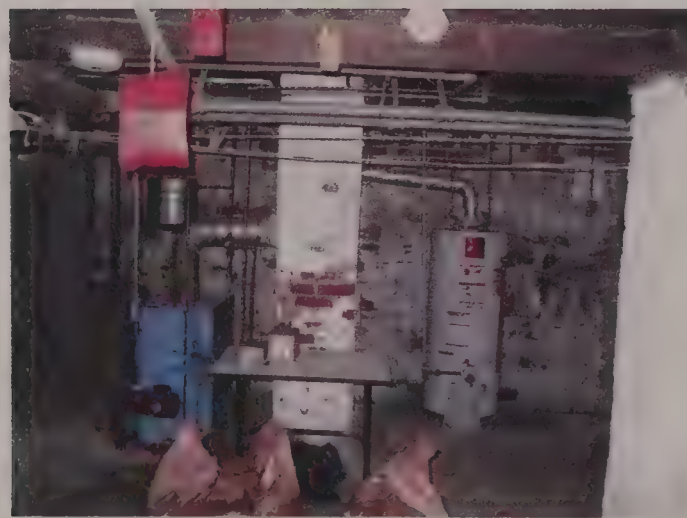
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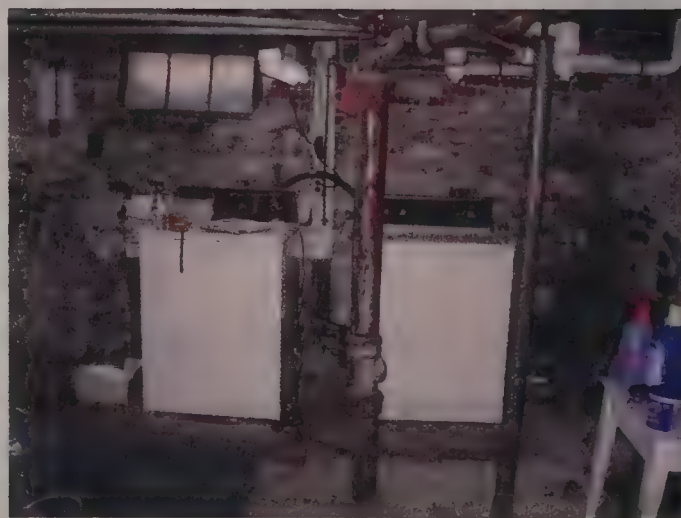
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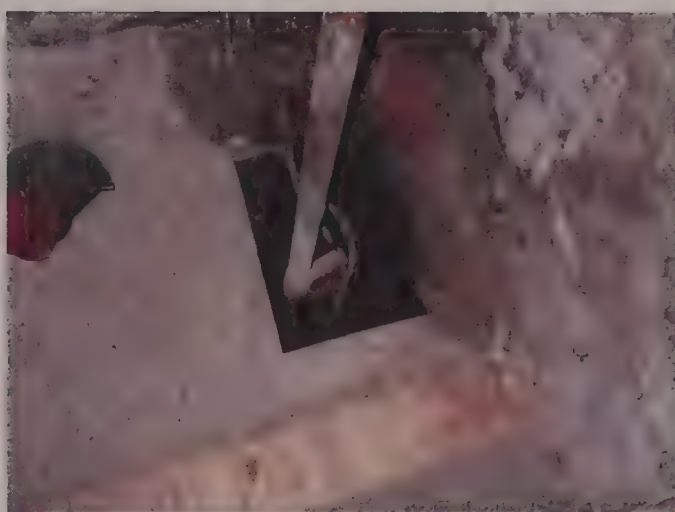
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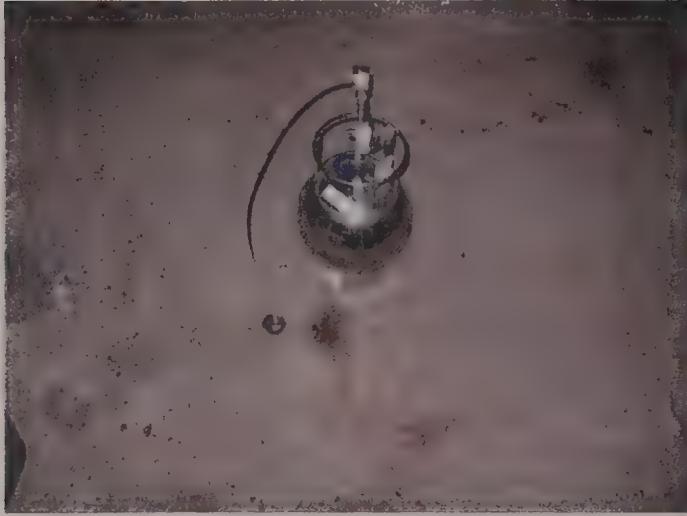
10



11



12



13



14

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **H. Ballantyne**

Date: **3/15/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **156 Glen Street**

Property Contact: **Mike Finnegan (Other)**

Contact's Phone: Home: **1429**

Work:

Cell: **(781) 572-**

Building Occupants: Children under age 13: **1**

Children age 13-18: **0**

Adults: **14**

PART II – BUILDING CHARACTERISTICS

Building Type:

Describe Building:

Type of Ground Cover Around Outside of Building:

Number of Floors: Below grade: **1** At or above grade: **3**

Basement Size: **0ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete w/ some patches of dirt**

Foundation Materials: **~2' stone& mortar, ~4' brick & mortar**

Integrity: **Concrete w/cracks & dirt**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input checked="" type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☒ Bathroom Ventilation Fans
 ☒ Mechanical Fans
- ☒ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☒ Natural Gas
 ☐ Electric
 ☐ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☒ Insulation
 ☐ Storm Windows
 ☒ Energy Efficient Windows
- ☐ Other: efficient windows in all apt.

PART III – OUTDOOR CONTAMINANT SOURCESOther stationary sources nearby (gas stations, emission stacks, etc.): **Railroad****PART IV – INDOOR CONTAMINANT SOURCES**

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	interior latex primer, white enamel paint, spackle	<input checked="" type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	laundry detergent, shout, bleach, fabric softner	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input checked="" type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.	1 sealed container of kitty litter	<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **~10 ppb next to washer/dryer, otherwise 0 ppb.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **daily** Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☒ When were dry-cleaned clothes last brought into the building? **unknown**

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? **25% of basement sq footage**

PART VII – ADDITIONAL COMMENTS

Floor-concrete ~2; stone & mortar, brick & mortar to grade (~5'). Walls open at joints. Building has been refurbished within the last year.

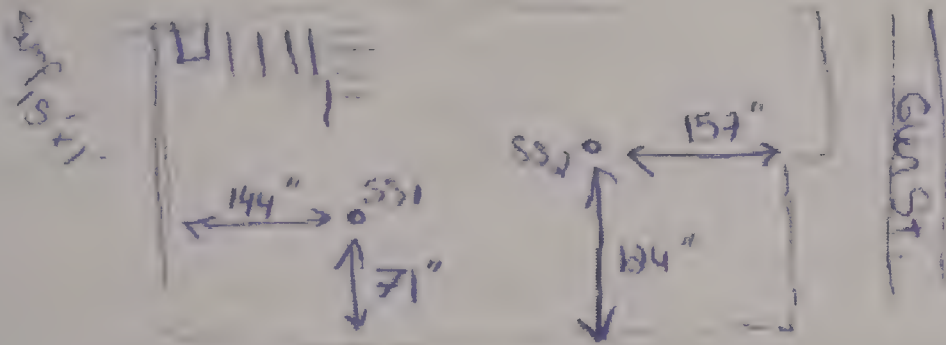
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **156 Glen Street**
 Date: **3/15/2007**
 Logged by: **H. Ballantyne**

Sub-Slab Monitoring Point IDs:
156 SS1 & SS2

Basement Sketch



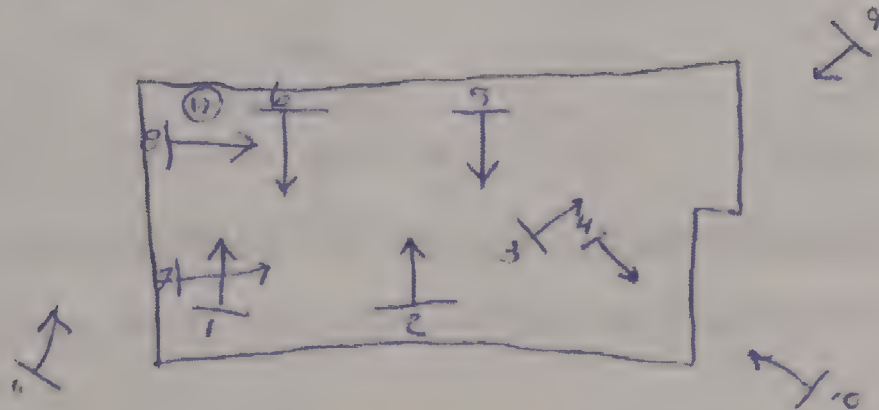
Ceiling Height: ~7'

Basement Height Above
 Grade: ~4.5'

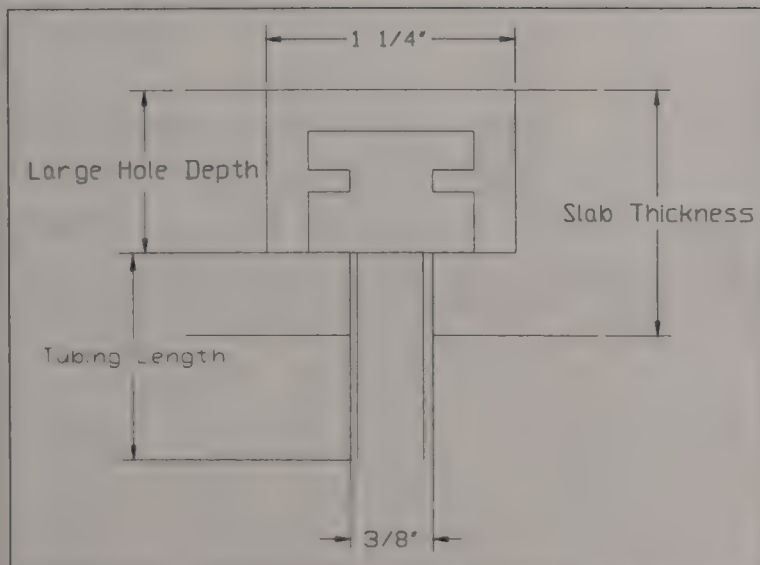
*all walls
 unsealed*

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	2"	1 1/2"		
Tubing Length:	3 1/2"	3 1/2"		
Type of Material Under Slab:	sand silt	fine sand		
Large Hole Depth:	2"	1 1/2"		

Comments:

GEI



Consultants

**SUB-SLAB SAMPLING
CHECKLIST**

Sampling Location:

156 Glen StreetSample ID: **156-Glen SS1**

Date: **03/15/2007**
Sampling personnel: **H. Ballantyne**

Summa Canister ID: **M150**
Flow Regulator ID: **MC061**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **1:50:00 PM**
Sampling Finish Time: **2:51:00 PM**

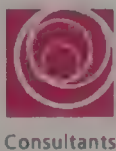
During Sampling	
Time	Vacuum
2:37:00 PM	13

Did Summa Canister go to ambient pressure? **No**Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**Pressure gauge reading (After sample collected): Flow Controller: **1.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	54	52
Barometric Pressure:	29.92	29.94
Prevailing Wind Direction:	NW to SE	NW to SE
General Weather Conditions:	cool, overcast, humid	cool light rain

Photographs taken before sampling? **Yes** If Yes, what time: **1:57:00 PM** Taken by: **S. Slater**Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA****Comments:**

Vacuum prior to sampling: **0.000 in wc**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **0 ppb**
Amount of air purged prior to sampling: **~30 liters**

GEI

Consultants

**SUB-SLAB SAMPLING
CHECKLIST**

Sampling Location:

156 Glen StreetSample ID: **156-Glen SS2**Date: **03/15/2007**Sampling personnel: **H. Ballantyne**Summa Canister ID: **M055**Flow Regulator ID: **MC094**Sample Type / Analysis Method: **TO15/Summa**Sampling Start Time: **1:56:00 PM**Sampling Finish Time: **2:51:00 PM****During Sampling**

Time

Vacuum

**2:36:00
PM****14**Did Summa Canister go to ambient pressure? **No**Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**Pressure gauge reading (After sample collected): Flow Controller: **2.5 in/hr****Environmental Conditions (Outside):****Before Sampling****After Sampling**

Temperature:

54**52**

Barometric Pressure:

29.92**29.94**

Prevailing Wind Direction:

NW to SE**NW to SE**

General Weather Conditions:

cloudy**cool, rain**Photographs taken before sampling? **Yes** If Yes, what time: **1:56:00 PM** Taken by: **S. Slater**Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA****Comments:**Vacuum prior to sampling: **0.000**Ambient air concentration: **0 ppb**Soil gas concentration prior to sampling: **0 ppb**Amount of air purged prior to sampling: **~30 liters**

**Photo Log of Sub-Slab Installation: 156 Glen St--attached to 21 Morton Street
(March 15, 2007)**

1. Paint can storage below the stairs
2. Furnaces in center of basement
3. Pipe in open hole, WNW corner
4. Exposed insulation around piping, NNW corner near "bay window" section
5. Wide shot of center basement, including furnaces and water heaters
6. Laundry detergents along eastern wall of basement
7. SS1
8. SS2



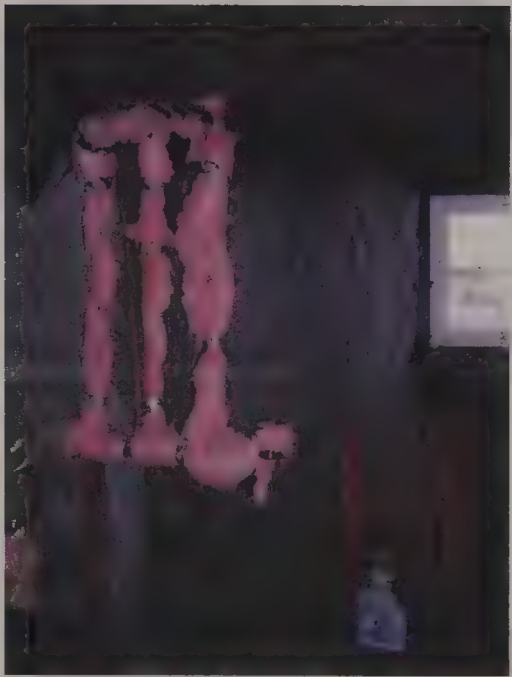
1



2



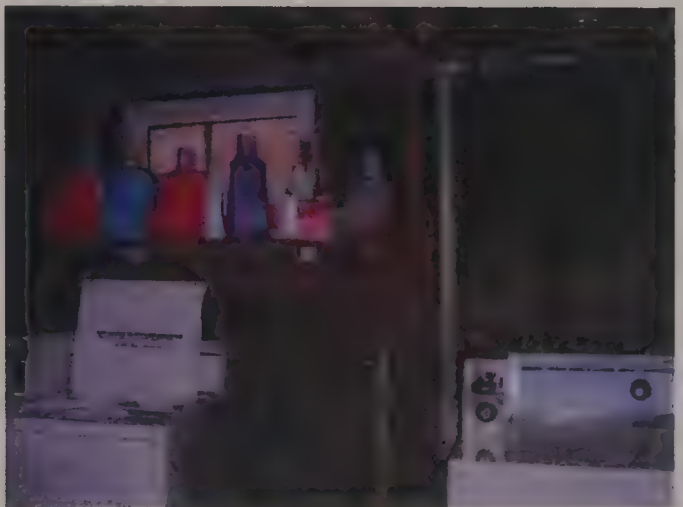
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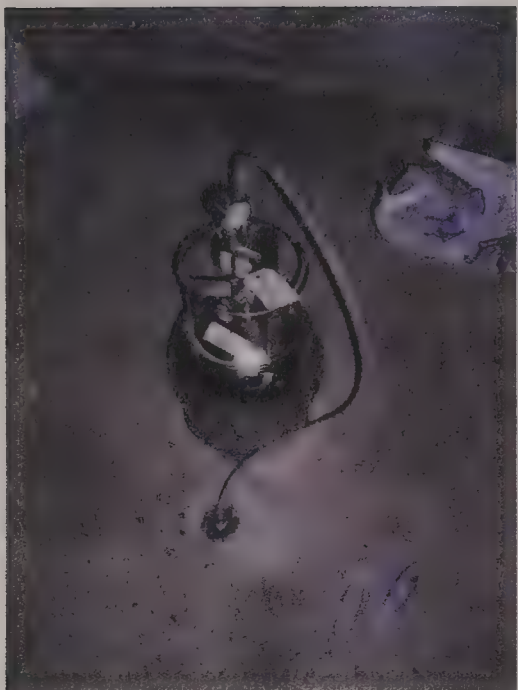
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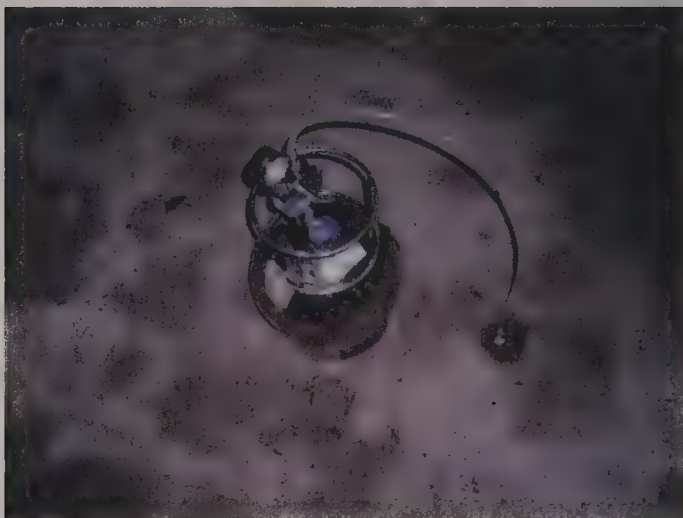
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PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **H. Ballantyne**

Date: **3/15/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **21 Morton Street**

Property Contact: **Mike Finnegan (Other)**

Contact's Phone: Home:

Work:

Cell: **7815721429**

Building Occupants: Children under age 13: **1**

Children age 13-18: **0**

Adults: **14**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Concrete and Asphalt**

Number of Floors: Below grade: **1** At or above grade: **3**

Basement Size: **1642ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete w/ some patches of dirt**

Foundation Materials: **~2' stone& mortar, ~4' brick & mortar**

Integrity: **Concrete w/cracks (dirt expsd)**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input checked="" type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☒ Bathroom Ventilation Fans
 ☒ Mechanical Fans
- ☒ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☒ Natural Gas
 ☐ Electric
 ☐ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☒ Insulation
 ☐ Storm Windows
 ☒ Energy Efficient Windows
- ☐ Other: efficient windows in all apt.

PART III – OUTDOOR CONTAMINANT SOURCESOther stationary sources nearby (gas stations, emission stacks, etc.): **Railroad****PART IV – INDOOR CONTAMINANT SOURCES**

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	paint, caulking, joint compound, sheet rock	<input checked="" type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	laundry detergent, bleach, fabric softner	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input checked="" type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.	1 sealed container of kitty litter	<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **~500 ppb between washer/dryer wktn lots of PVC pipe glue visible. Owner of building stopped by, was smoking cigar No other readings registered.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **daily** Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☒ When were dry-cleaned clothes last brought into the building? **unknown**

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? **10' x 10' container**

PART VII – ADDITIONAL COMMENTS

Floor-concrete ~2; stone & mortar, brick & mortar to grade (~5'). Walls open at joints. Building has been refurbished within the last year.

SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**

Project Number: **045162**

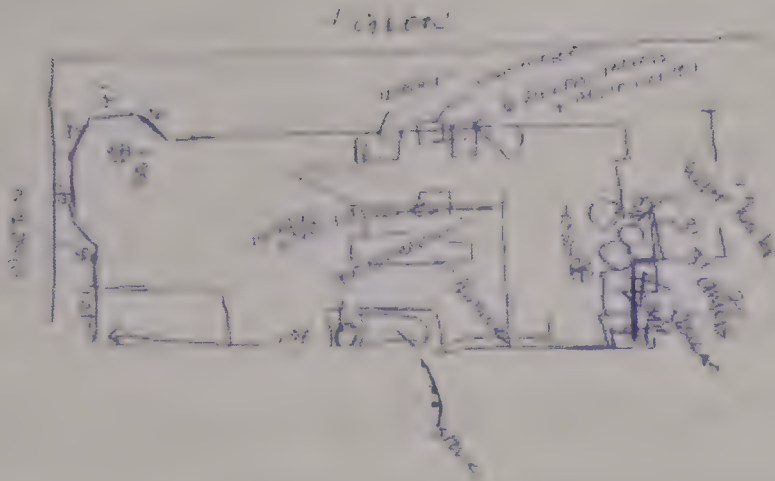
Address: **21 Morton Street**

Date: **3/15/2007**

Logged by: **S. Slater T. Daigle**

Sub-Slab Monitoring Point IDs:
SS1A & SS2A

Basement Sketch

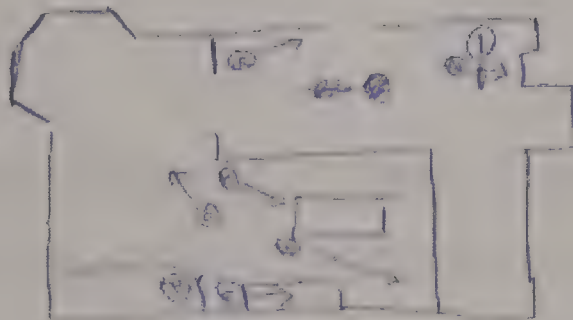


Ceiling Height: **~7'**

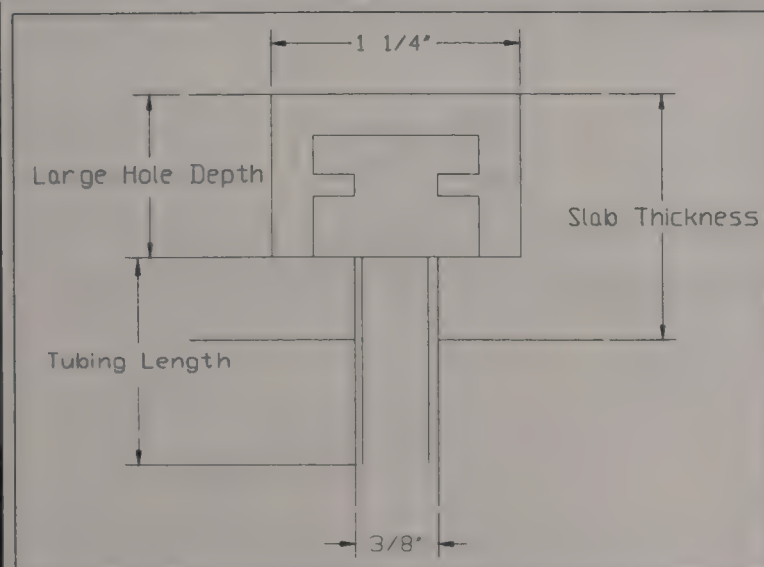
Basement Height Above
Grade: **~4.5'**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	1"	1 3/4"		
Tubing Length:	1"	3/4"		
Type of Material Under Slab:	sandy silt	fine sand		
Large Hole Depth:	1 1/2"	1 3/4"		

Comments: Removed and reinstalled previous points in same locations. Soil was wet under SS1A.



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
21 Morton Street

Sample ID: **SS1A**

Date: **03/28/2007**
Sampling personnel: **T. Daigle S. Slater**

Summa Canister ID: **M148**
Flow Regulator ID: **MC064**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **11:16:00 AM**
Sampling Finish Time: **12:12:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	60	64.3
Barometric Pressure:	30.18	30.20
Prevailing Wind Direction:	E	E
General Weather Conditions:	Sunny	Sunny

Photographs taken before sampling? **Yes** If Yes, what time: **11:28:00 AM** Taken by: **T. Daigle**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **Previous sample port had water and mud at the top.**

Vacuum prior to sampling: **0.000 inwc**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **700 ppb**
Amount of air purged prior to sampling: **~15 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
21 Morton Street

Sample ID: **SS2A**

Date: **03/28/2007**
Sampling personnel: **T. Daigle S. Slater**

Summa Canister ID: **M043**
Flow Regulator ID: **MC057**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **11:26:00 AM**
Sampling Finish Time: **12:26:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **32in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	60	64.3
Barometric Pressure:	30.18	30.20
Prevailing Wind Direction:	E	E
General Weather Conditions:	Sunny	Sunny

Photographs taken before sampling? **Yes** If Yes, what time: **11:29:00 AM** Taken by: **T. Daigle**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **On 3/15/07 tried with canister M130 flow regulator**

Vacuum prior to sampling: **0.000 inwc**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **0 ppb**
Amount of air purged prior to sampling: **~31.5 liters**

**Sub-Slab Installation Photo Log: 21 Morton Street--attached to 156 Glen Street
(March 15, 2007)**

1. Laundry detergents, washer and dryer along northeast wall of basement
2. Water heaters and brick repair on northern corner walls
3. Brick/stone interface in western corner of foundation wall
4. Furnaces in central area of basement surrounded by wood-frame and dry-wall partitioning
5. Storage closet items
6. Old stove along southeastern wall
7. Open space behind partitioning in southern corner of basement
8. Utility meters along the northwestern wall
9. Summa canister and sampling port for sub-slab soil vapor sample 045162-21Mort-SS1
10. Summa canister and sampling port for sub-slab soil vapor sample 045162-21Mort-SS1A (reinstallation of SS1 on 3/28/07)
11. Summa canister and sampling port for sub-slab soil vapor sample 045162-21Mort-SS2A (reinstallation of SS2 on 3/28/07)



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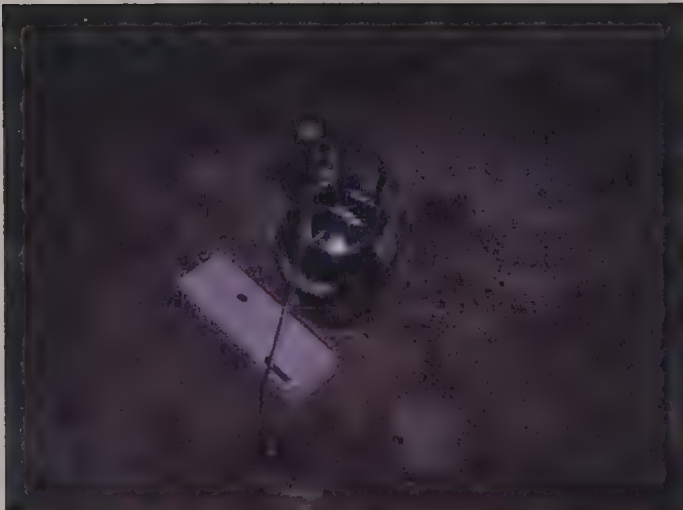
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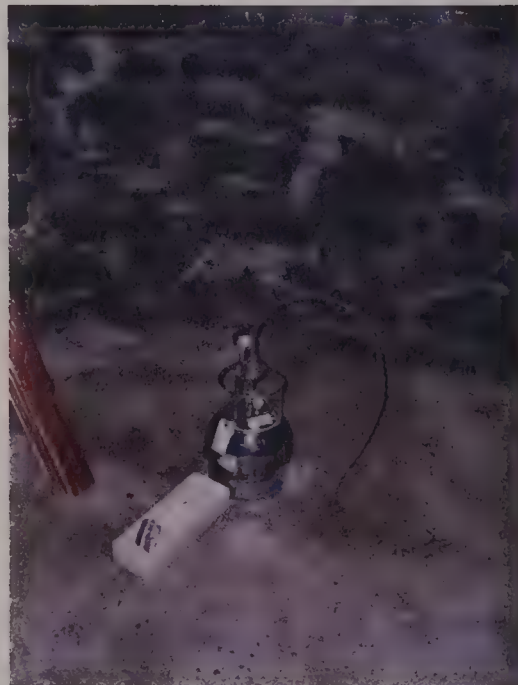
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PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **H. Ballantyne**

Date: **3/19/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **18 Morton Street**

Property Contact: **Luis Ortiz (Owner)**

Contact's Phone: Home:

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **1**

Adults: **9**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Grass & asphalt**

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **1012ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **Stone brick mortar**

Integrity: **Concrete; Good Integrity**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Recreation or Living Space**

Moisture Conditions In Basement:

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|---|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input checked="" type="checkbox"/> Steam Radiation |
| <input checked="" type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☒ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☒ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☒ Natural Gas
 ☐ Electric
 ☐ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☒ Insulation
 ☐ Storm Windows
 ☒ Energy Efficient Windows
- ☐ Other: some efficient windows

PART III – OUTDOOR CONTAMINANT SOURCESOther stationary sources nearby (gas stations, emission stacks, etc.): **no****PART IV – INDOOR CONTAMINANT SOURCES**

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input checked="" type="checkbox"/> Gasoline storage cans	car maintenance products, propane, acetylene	<input type="checkbox"/>
<input checked="" type="checkbox"/> Gas-powered equipment	snow blower, air compressor	<input type="checkbox"/>
<input checked="" type="checkbox"/> Kerosene storage cans	1 can lighter fluid	<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	7 1 gallon house paint, caulking 3 cans spray paint	<input type="checkbox"/>
<input checked="" type="checkbox"/> Cleaning solvents	windex, disinfectant spray, " <input checked="" type="checkbox"/> pine", ajax	<input type="checkbox"/>
<input checked="" type="checkbox"/> Oven cleaners	easy off heavy duty oven cleaner (lemon scent)	<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input checked="" type="checkbox"/> Carpet / upholstery cleaners	high traffic carpet cleaner (zep)	<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	fantastik-bleach, fabric softner, detergent	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input checked="" type="checkbox"/> Furniture / floor polish	"behold " furniture polish	<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input checked="" type="checkbox"/> Hobbies - glues, paints, etc.	caulking, wood filler, base adhesive, shoe sealant	<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **0 ppb throughout.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **daily 2nd floor** Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☒ When were dry-cleaned clothes last brought into the building? **2nd floor**

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☒ If so, when and which chemicals? **Grass fertilizer (Fall 2006)**

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

Basement- home office area with bed.

SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**

Project Number: **045162**

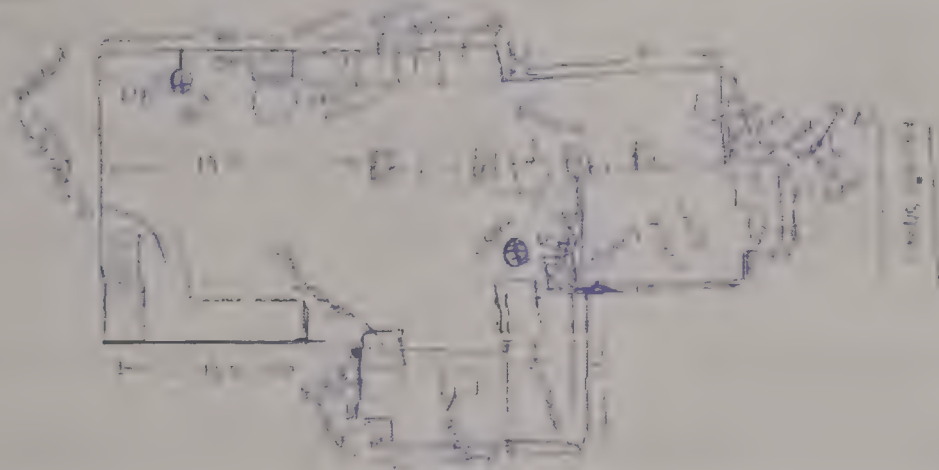
Address: **18 Morton Street**

Date: **3/19/2007**

Logged by: **H. Ballentyne**

Sub-Slab Monitoring Point IDs:
SS1 & SS2

Basement Sketch



Ceiling Height: 7'

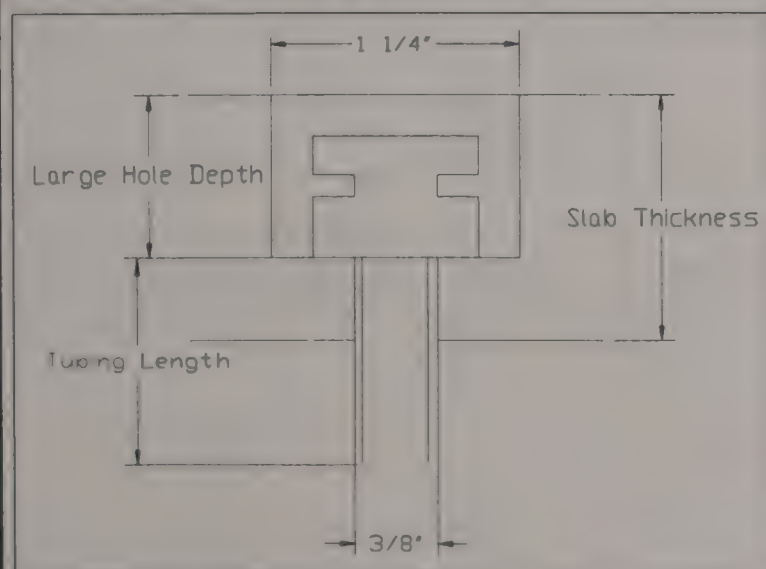
Basement Height Above
Grade: 1.5'

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	1.75"	2"		
Tubing Length:	3.25"	3.5"		
Type of Material Under Slab:	silty sand	silt		
Large Hole Depth:	1.75"	1.75"		

Comments: soil slightly damp under slab



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
18 Morton Street

Sample ID: **SS1**

Date: **03/19/2007**
Sampling personnel: **H. Ballentyne**

Summa Canister ID: **M068**
Flow Regulator ID: **MFC045**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **7:45:00 PM**
Sampling Finish Time: **8:39:00 PM**

During Sampling	
Time	Vacuum
8:00:00 PM	23

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	35	21
Barometric Pressure:	30.23	30.22
Prevailing Wind Direction:	SW	SW
General Weather Conditions:	light snow	light snow

Photographs taken before sampling? **Yes** If Yes, what time: **7:44:00 PM** Taken by: **H. Ballantyne**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **during sampling: time: 2016 Vacuum 15 T: 2030 V:8**

Vacuum prior to sampling: **0.000**

Ambient air concentration: **0**

Soil gas concentration prior to sampling: **216**

Amount of air purged prior to sampling: **5 min**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
18 Morton Street

Sample ID: **SS2**

Date: **03/19/2007**
Sampling personnel: **H. Ballentyne**
Summa Canister ID: **M058**
Flow Regulator ID: **MC085**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **7:50:00 PM**
Sampling Finish Time: **8:46:00 PM**

During Sampling	
Time	Vacuum
8:00:00 PM	25

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	35	21
Barometric Pressure:	30.23	30.22
Prevailing Wind Direction:	SW	SW
General Weather Conditions:	light snow	light snow

Photographs taken before sampling? **Yes** If Yes, what time: **7:49:00 PM** Taken by: **H. Ballentyne**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **Time: 2015 Vacuum: 19 T: 2031 V: 12 T:2040 V:7**

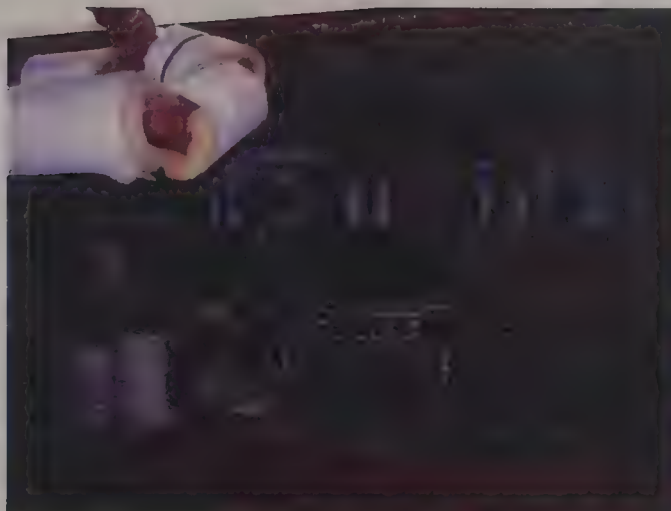
Vacuum prior to sampling: **0.000**
Ambient air concentration: **0**
Soil gas concentration prior to sampling: **350**
Amount of air purged prior to sampling: **~15 liters**

Sub-Slab Installation Photo Log: 18 Morton Street (March 19, 2007)

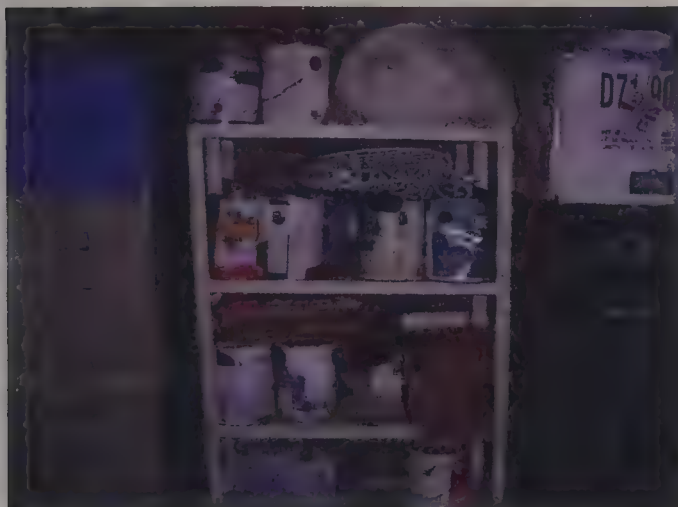
1. Workbench in southwest corner
2. Workbench in southwest corner with insulated piping in foreground
3. Paints, finishes, etc. on utility shelving along northwest wall
4. Box of empty motor oil containers against southwestern wall at base of stairs
5. View of water heater, washer/dryer, storage items along northwestern wall from the south
6. Furnace in southeastern alcove
7. Furnace in central area of basement
8. Office area in the southeast corner of basement
9. Utility meters along the northeastern basement wall
10. Sampling port for sub-slab soil vapor sample 045162-18Mort-SS2
11. Hole in concrete slab surrounding water meter along the northeastern basement wall
12. Sampling port for sub-slab soil vapor sample 045162-18Mort-SS2
13. Summa canister set-up for sub-slab soil vapor sample 045162-18Mort-SS1
14. Summa canister set-up for sub-slab soil vapor sample 045162-18Mort-SS2



1



2



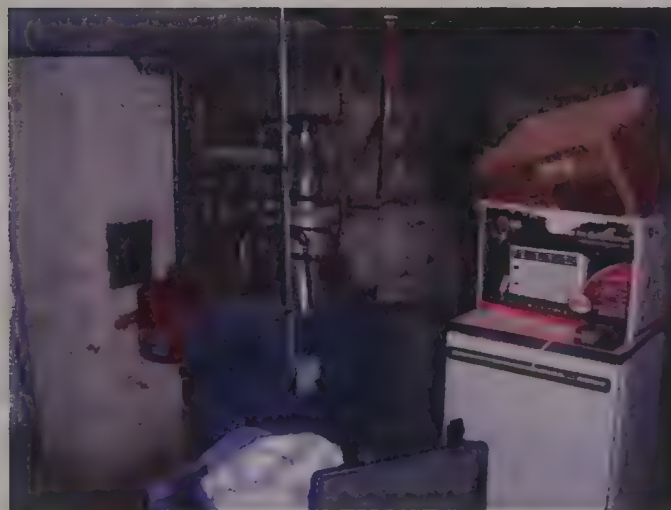
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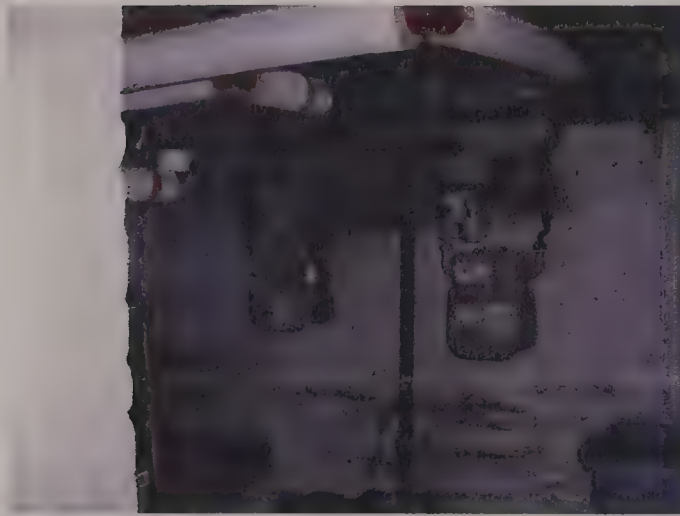
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PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **S. Slater T. Daigle**
Site Name: **50 Tufts Street, Somerville, MA**

Date: **3/19/2007**
Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **35-37 Knowlton Street**

Property Contact: **David Stiles (Owner)**

Contact's Phone: Home: **(617) 666-1872**

Work:

Cell: **6178931303**

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **5**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-Family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Grass and asphalt**

Number of Floors: Below grade: **1** At or above grade: **3**

Basement Size: **1252ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete & Dirt**

Foundation Materials: **Brick**

Integrity: **Concrete with Cracks**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input checked="" type="checkbox"/> Other: gas 1st/3rd oil 2nd furnace heater stove | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
- ☒ Individual Air Conditioning Units
- ☐ Bathroom Ventilation Fans
- ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
- ☐ Other: 1st/3rd

Type of fuel utilized:

- ☒ Natural Gas
- ☐ Electric
- ☒ Fuel Oil
- ☐ Wood
- ☐ Coal
- ☐ Solar
- ☐ Kerosene
- ☐ Outside (Fresh) Air Intake

Septic system? No

Irrigation/private well? No

Existing subsurface depressurization (radon) system in place? No Radon System

Has the building been weatherized with any of the following:

- ☒ Insulation
- ☐ Storm Windows
- ☒ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Gas-powered equipment	snowblower and lawnmower in back of basement.	<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	rear of basement near stairs & furnace	<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	3 containers in basement	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **Front of house (Knowlton Street side) registered no change- 0 ppb. Rear of house ranged from 2 to 79 ppb when held still- as high as 500 ppb when moving.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **Daily** Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? **~75% of basement area**

PART VII – ADDITIONAL COMMENTS

Front of house has damage near water pipes. Did not test 1st floor at Mr. Stiles' request.

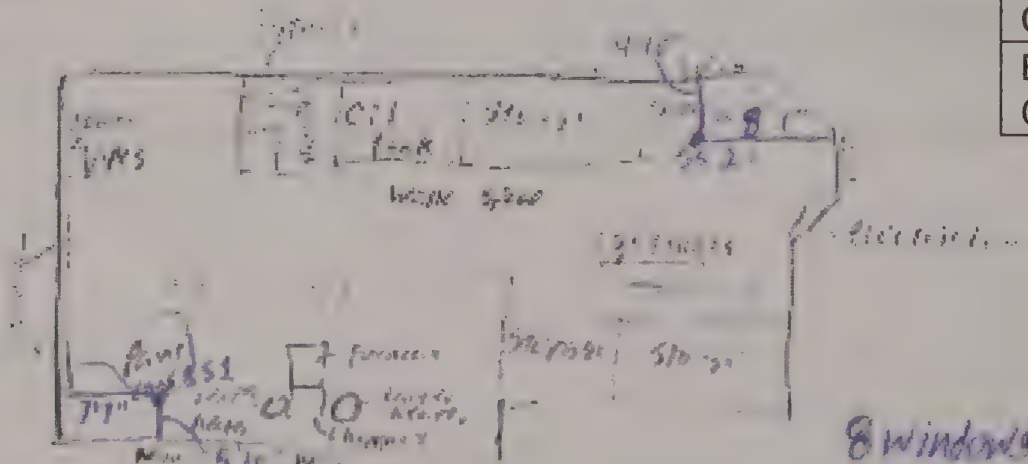
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **35-37 Knowlton Street**
 Date: **3/19/2007**
 Logged by: **T. Daigle**

Sub-Slab Monitoring Point IDs:
SS1 & SS2

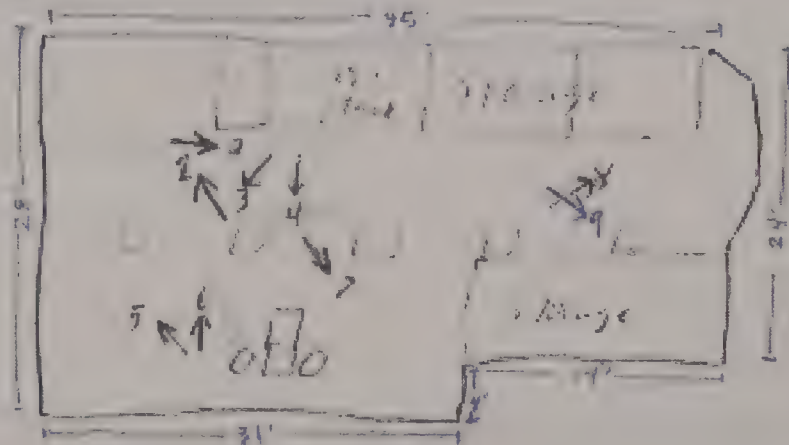
Basement Sketch



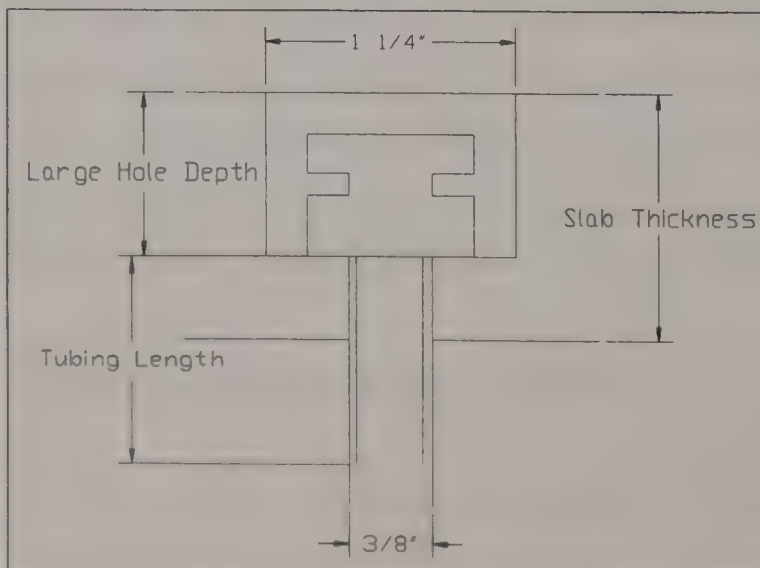
Ceiling Height: ~7'
 Basement Height Above
 Grade: 22 1/4"

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	4"	1 1/2"		
Tubing Length:	4 1/8"	6 1/2"		
Type of Material Under Slab:	NR	NR		
Large Hole Depth:	1 3/4"	2 1/2"		

Comments: Gravel in SS2 caused drill bit to deflect from vertical during point installation.
 NR = Not recovered



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
35-37 Knowlton Street

Sample ID: **SS1**

Date: **03/19/2007**

Sampling personnel: **S. Slater**

Summa Canister ID: **M104**

Flow Regulator ID: **MC022**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **2:33:00 PM**

Sampling Finish Time: **3:35:00 PM**

During Sampling	
Time	Vacuum
3:00:00 PM	18

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **3 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	44.8	45.1
Barometric Pressure:	30.28	30.24
Prevailing Wind Direction:	still	still
General Weather Conditions:	overcast	overcast

Photographs taken before sampling? **Yes** If Yes, what time: **2:33:00 PM** Taken by: **S. Slater**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **0.000 in wc**

Ambient air concentration: **variable around 30 ppb**

Soil gas concentration prior to sampling: **6552 ppb**

Amount of air purged prior to sampling: **~21 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
35-37 Knowlton Street

Sample ID: **SS2**

Date: **03/19/2007**

Sampling personnel: **S. Slater**

Summa Canister ID: **M041**

Flow Regulator ID: **MFC008**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **3:45:00 PM**

Sampling Finish Time: **4:37:00 PM**

During Sampling

Time	Vacuum
4:21:00 PM	12.5

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

44.8

45.51

Barometric Pressure:

30.28

30.24

Prevailing Wind Direction:

still

still

General Weather Conditions:

overcast

overcast

Photographs taken before sampling? **Yes** If Yes, what time: **3:47:00 PM** Taken by: **S. Slater**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **0.000 in wic**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **12.5 ppm**

Amount of air purged prior to sampling: **~23 liters**

Sub-Slab Installation Photo Log: 35-37 Knowlton Street (March 19, 2007)

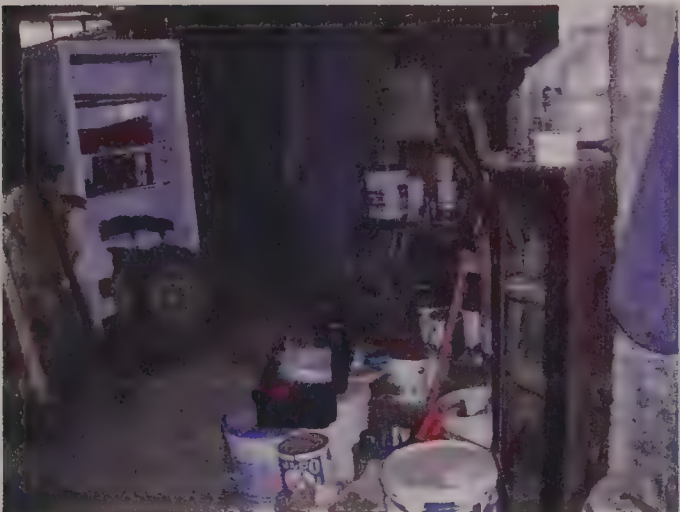
1. Southern corner of basement (view of beneath the stairs).
2. Looking WNW down basement from west near the stairs.
3. View of Eastern corner of basement from the west.
4. Furnace and water heaters along northern wall.
5. Paints, primers and miscellaneous storage items in the western half of the basement.
6. Paints, primers and miscellaneous storage items in the western half of the basement.
7. Furniture stored along northern area of basement near the stairs.
8. Storage items and electric meters along western wall.
9. Gas meters on eastern wall.
10. Summa canister and sub-slab soil vapor sampling port for sample 045162-35Know-SS1.
11. Summa canister and sub-slab soil vapor sampling port for sample 045162-35Know-SS2.



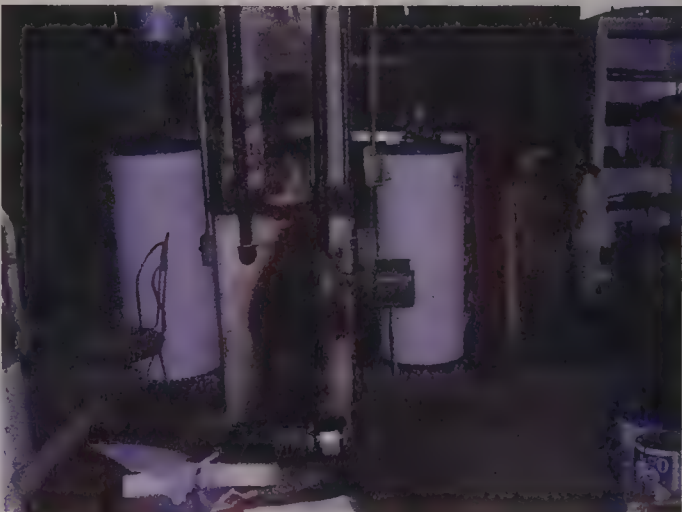
1



2



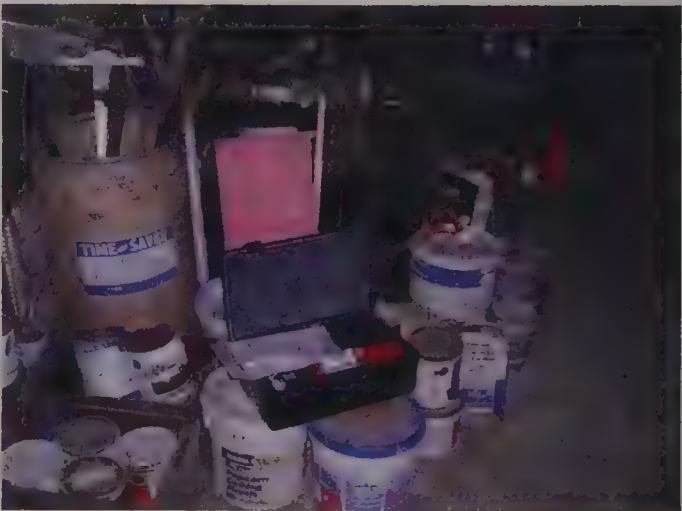
3



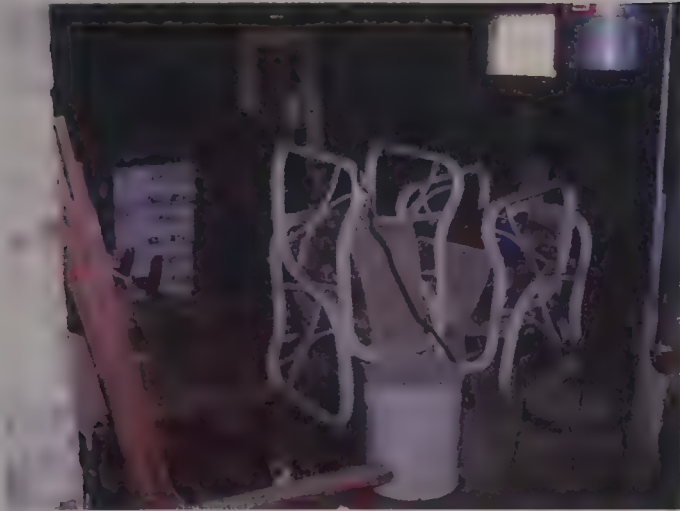
4



5



6



7



8



9



10



11

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **K. Wolfe T. Daigle**
Site Name: **50 Tufts Street, Somerville, MA**

Date: **3/20/2007**
Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **91-93 Franklin Street**

Property Contact: **()**

Contact's Phone: Home:

Work:

Cell:

Building Occupants: Children under age 13:

Children age 13-18:

Adults:

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building: **Duplex**

Type of Ground Cover Around Outside of Building: **Grass, conc, asphalt**

Number of Floors: Below grade: **1** At or above grade: **0**

Basement Size: **1600ft²**

Foundation Type: **Full Basement**

Basement Floor: **Dirt**

Foundation Materials: **Stone & bricks**

Integrity: **Earthen Floor**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

☐ Basement sump
present?

☐ Sump pump?

☐ Standing water in
sump?

☐ Product in sump?

Type of heating system:

☐ Hot Air Circulation

☐ Hot Air Radiation

☐ Wood

☐ Steam Radiation

☒ Hot Water Radiation

☐ Kerosene Heater

☐ Electric Baseboard

☐ Heat Pump

☐ Other:

Type of ventilation system:

- ☐ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☐ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☐ Natural Gas
 ☐ Electric
 ☒ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☐ Insulation
 ☐ Storm Windows
 ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCESOther stationary sources nearby (gas stations, emission stacks, etc.): **Railroad****PART IV – INDOOR CONTAMINANT SOURCES**

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input checked="" type="checkbox"/> Gasoline storage cans	empty light gas can near water heaters rear bsment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Gas-powered equipment	lawn mower behind water heaters	<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	many containers on shelves (East side)	<input type="checkbox"/>
<input checked="" type="checkbox"/> Cleaning solvents	some small bottles dispensed throughout	<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	febreeze, soft soap	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input checked="" type="checkbox"/> Polishes / waxes	with paints on east side	<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input checked="" type="checkbox"/> Furniture / floor polish	with paints on east side	<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input checked="" type="checkbox"/> Hobbies - glues, paints, etc.	PVC primer & glue near water heater	<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor?

PID screening of cracks in wall/ floor and/or wall/floor interface:

PID screening above space above drain sump?

Results of screening / comments:

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? ☐ Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? ☐ If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

Small concrete slabs beneath water heaters.

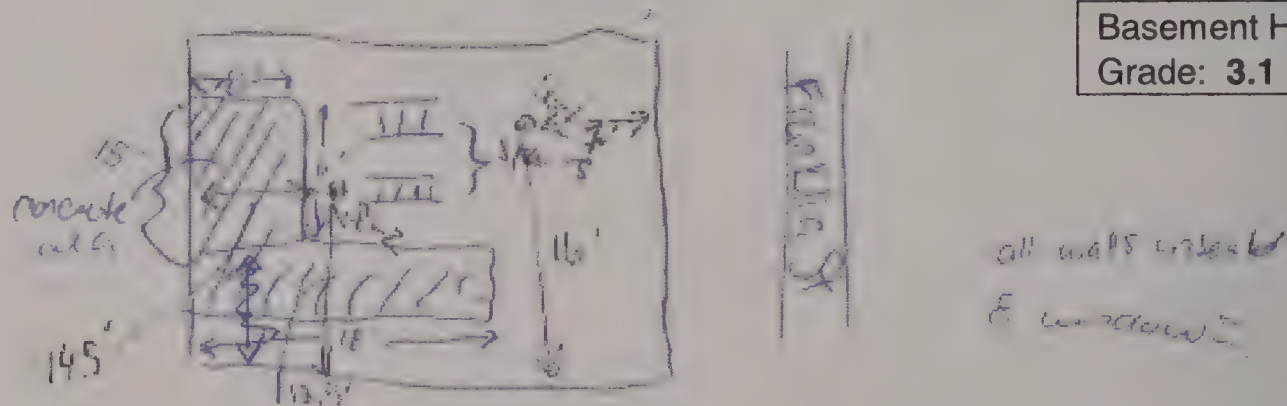
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **91-93 Franklin Street**
 Date: **3/20/2007**
 Logged by: **K. Wolfe T. Daigle**

Sub-Slab Monitoring Point IDs:
SG1 and SG2

Basement Sketch

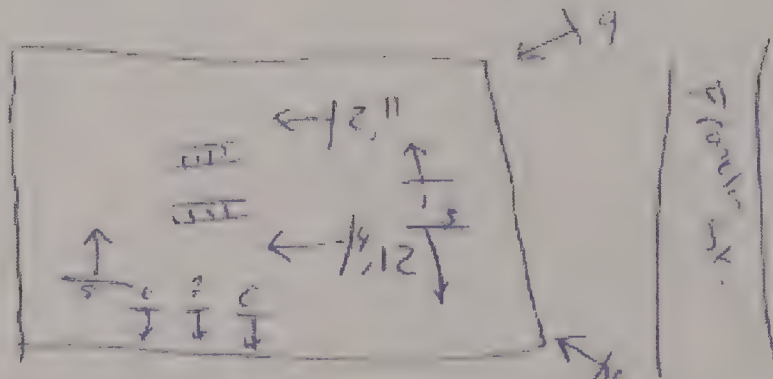


Ceiling Height: **8**

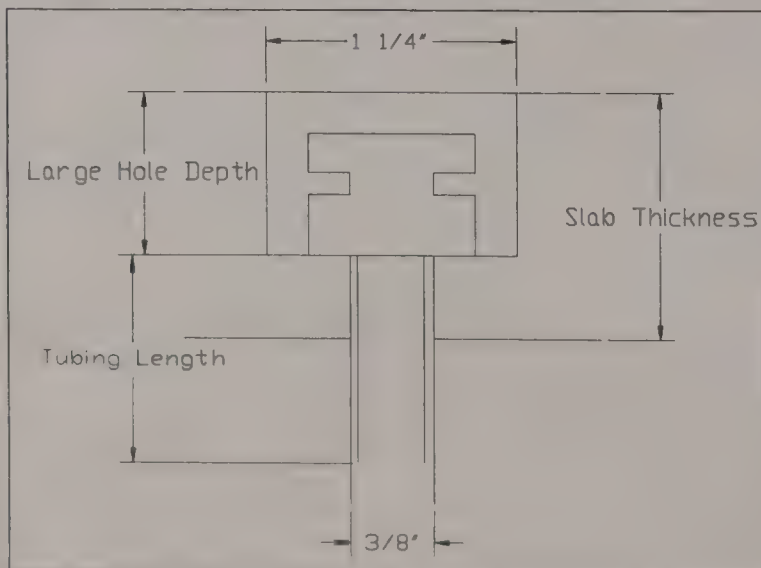
Basement Height Above
 Grade: **3.1**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	NA	NA		
Tubing Length:	3.5'	3.5'		
Type of Material Under Slab:	silt	silt		
Large Hole Depth:	2.5'	2.5'		

Comments: soil slightly damp towards bottom
 8 windows in basement, walls unsealed; Both holes were 2.5' deep and packed with 1' sand, 1' bentonite, and .5' sand. Topped with a concrete seal



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
91-93 Franklin Street

Sample ID: **SG-1A**

Date: **03/20/2007**

Sampling personnel:

Summa Canister ID: **M056**

Flow Regulator ID: **MC075**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **11:48:00 AM**

Sampling Finish Time: **12:45:00 PM**

During Sampling

Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

45

46

Barometric Pressure:

30.18

30.18

Prevailing Wind Direction:

none

none

General Weather Conditions:

sunny

sunny

Photographs taken before sampling? **Yes** If Yes, what time: **11:48:00 AM** Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **NA**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **0 ppb**

Amount of air purged prior to sampling: **~ 30 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
91-93 Franklin Street

Sample ID: **SG-1B**

Date: **03/20/2007**
Sampling personnel: **K. Wolfe T. Daigle**

Summa Canister ID: **M118**
Flow Regulator ID: **MC072**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **11:49:00 AM**
Sampling Finish Time: **2:45:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **Yes**

Pressure gauge reading (Pre-opening): Flow Controller: **30.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **0 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	45	52
Barometric Pressure:	30.18	30.22
Prevailing Wind Direction:	none	North
General Weather Conditions:	sunny	sunny

Photographs taken before sampling? **Yes** If Yes, what time: **2:48:00 PM** Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **Field Duplicate of 045162-91Frank-SG1A**

Vacuum prior to sampling: **NA**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **0 ppb**
Amount of air purged prior to sampling: **purged for 10 minutes**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
91-93 Franklin Street

Sample ID: **SG-2**

Date: **03/20/2007**
Sampling personnel: **K. Wolfe T. Daigle**

Summa Canister ID: **M046**
Flow Regulator ID: **MC054**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **12:00:00 PM**
Sampling Finish Time: **2:45:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	45	52
Barometric Pressure:	30.18	30.22
Prevailing Wind Direction:	none	north
General Weather Conditions:	sunny	sunny

Photographs taken before sampling? **Yes** If Yes, what time: **12:00:00 PM** Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **purged for 10 minutes**

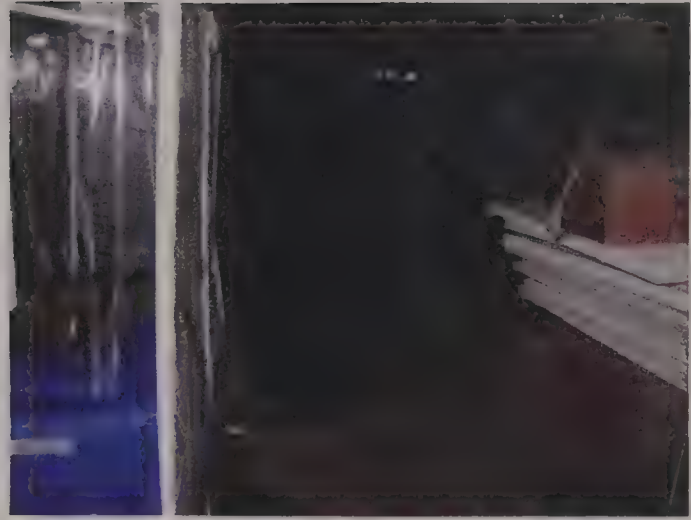
Vacuum prior to sampling: **NA**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **14 ppb**
Amount of air purged prior to sampling: **~30 liters**

Sub-Slab Installation Photo Log: 91-93 Franklin Street (March 21, 2007)

1. Northeast corner of basement.
2. View of northwest corner of basement from the northeast.
3. Southeast corner of basement.
4. Southwest corner of basement.
5. Northwest corner of basement.
6. Paints and cleaning supplies.
7. Paints and cleaning supplies.
8. Paints and cleaning supplies.
9. Exterior view of northeast corner of residence.
10. Exterior view of southeast corner of residence.
11. Basement ceiling in northern half of the basement.
12. Basement ceiling in southern half of the basement
13. Summa canister setup and soil gas sampling point for sample 045162-91Frank-SG1A.
14. Summa canister setup and soil gas sampling point for sample 045162-91Frank-SG2.



1



2



3



4



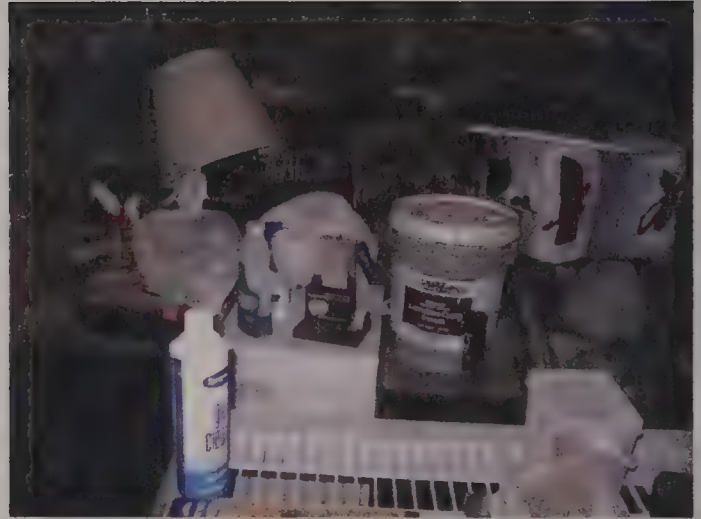
5



6



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8



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10



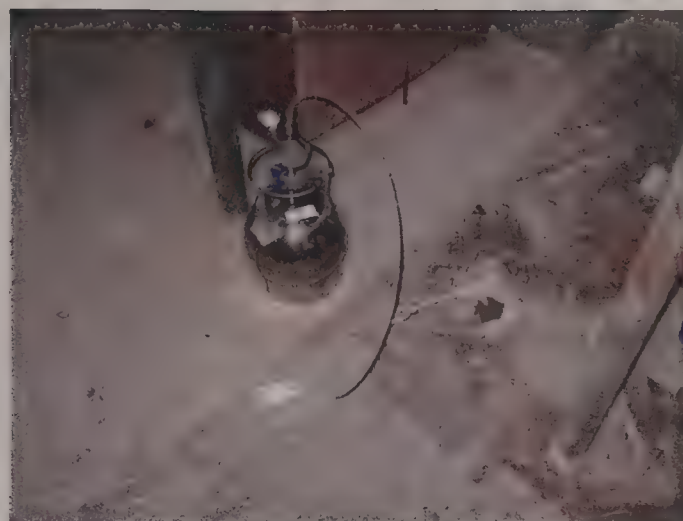
11



12



13



14

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **K. Wolfe T. Daigle**
Site Name: **50 Tufts Street, Somerville, MA**

Date: **3/21/2007**
Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **95r Franklin Street**
Property Contact: **Susan Southwick (Owner)**
Contact's Phone: Home: **(617) 666-9348**
Building Occupants: Children under age 13: **1**

Work: _____ Cell: _____
Children age 13-18: **0** Adults: **2**

PART II – BUILDING CHARACTERISTICS

Building Type: **Single-family Residential**
Describe Building: _____

Type of Ground Cover Around Outside of Building: _____

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **468ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **brick/mortar, dry wall cover**

Integrity: **Concrete; Good Integrity**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken: _____

☐ Basement sump present? ☐ Sump pump? ☐ Standing water in sump? ☐ Product in sump?

Type of heating system: _____

☐ Hot Air Circulation ☐ Hot Air Radiation ☐ Wood ☐ Steam Radiation
☐ Hot Water Radiation ☐ Kerosene Heater ☐ Electric Baseboard ☐ Heat Pump
☒ Other: **Forced hot air**

Type of ventilation system:

- | | | | |
|--|---|--|--|
| <input type="checkbox"/> Central Air Conditioning | <input checked="" type="checkbox"/> Individual Air Conditioning Units | <input type="checkbox"/> Bathroom Ventilation Fans | <input type="checkbox"/> Mechanical Fans |
| <input checked="" type="checkbox"/> Kitchen Range Hood Fan | <input type="checkbox"/> Other: AC 2 up, 2 down | | |

Type of fuel utilized:

- | | | | |
|---|-----------------------------------|-----------------------------------|---|
| <input checked="" type="checkbox"/> Natural Gas | <input type="checkbox"/> Electric | <input type="checkbox"/> Fuel Oil | <input type="checkbox"/> Wood |
| <input type="checkbox"/> Coal | <input type="checkbox"/> Solar | <input type="checkbox"/> Kerosene | <input type="checkbox"/> Outside (Fresh) Air Intake |

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- | | | |
|-------------------------------------|--|---|
| <input type="checkbox"/> Insulation | <input type="checkbox"/> Storm Windows | <input type="checkbox"/> Energy Efficient Windows |
| <input type="checkbox"/> Other: | | |

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	~10 small containers	<input type="checkbox"/>
<input checked="" type="checkbox"/> Cleaning solvents	~10 containers laundry detergent on dryer	<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input checked="" type="checkbox"/> Hobbies - glues, paints, etc.	1 container Elmers glue, 1 tubecaulk	<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **All readings 0.0 ppb.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☒ Describe (with location): **From school construction**

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location): **3 litter boxes with strong odor (but clean) many stains of cat urine/vomit**

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals? **Possibly in the past**

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

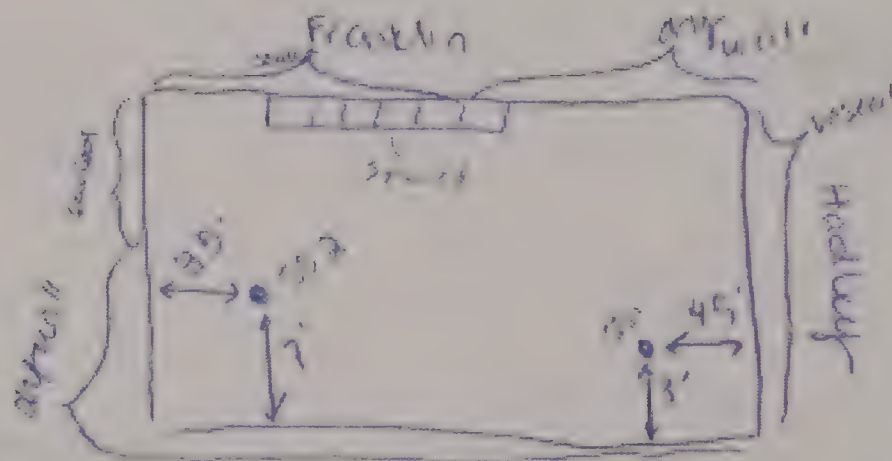
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **95R Franklin Street**
 Date: **3/21/2007**
 Logged by: **K. Wolfe T. Daigle**

Sub-Slab Monitoring Point IDs:
SS1 & SS2

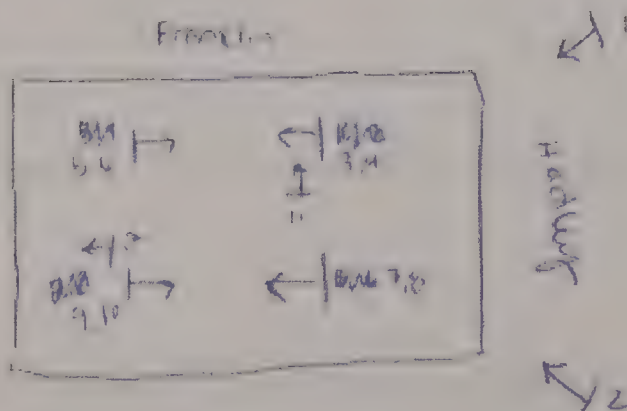
Basement Sketch



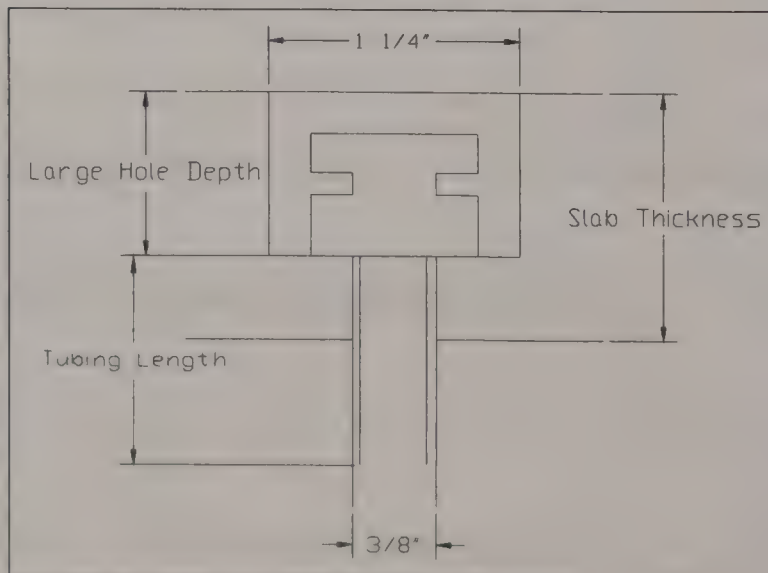
Ceiling Height: **7'3"**
 Basement Height Above
 Grade: **38"**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	3"	3"		
Tubing Length:	1"	1.5"		
Type of Material Under Slab:	silt	silt		
Large Hole Depth:	3"	1"		

Comments:



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
95R Franklin Street

Sample ID: **SS1**

Date: **03/21/2007**

Sampling personnel: **K. Wolfe**

Summa Canister ID: **m054**

Flow Regulator ID: **mc092**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **2:42:00 PM**

Sampling Finish Time: **3:32:00 PM**

During Sampling	
Time	Vacuum
3:08:00 PM	14

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **26 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

Not measured

Not measured

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Photographs taken before sampling? **Yes** If Yes, what time: **2:42:00 PM** Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

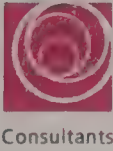
Vacuum prior to sampling: **0.000 in wc**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **27000 ppb (27 ppm)**

Amount of air purged prior to sampling: **~15 liters**

GEI



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
95R Franklin Street

Sample ID: **SS2**

Date: **03/21/2007**

Sampling personnel: **K. Wolfe**

Summa Canister ID: **m087**

Flow Regulator ID: **mc095**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **2:37:00 PM**

Sampling Finish Time: **3:34:00 PM**

During Sampling	
Time	Vacuum
3:08:00 PM	15

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

Not Measured

Not Measured

Barometric Pressure:

Prevailing Wind Direction:

General Weather Conditions:

Photographs taken before sampling? **Yes** If Yes, what time: **2:37:00 PM** Taken by: **K. Wolfe**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **very high soil gas readings with ppb-RAE**

Vacuum prior to sampling: **0.000 in wc**

Ambient air concentration: **70 ppb**

Soil gas concentration prior to sampling: **47000ppb (47 ppm)**

Amount of air purged prior to sampling: **~30 liters**

Sub-Slab Installation Photo Log: 95R Franklin Street (March 21, 2007)

1. Exterior view of southeast corner of residence.
2. Exterior view of southwest corner of residence.
3. View of northern half of basement from the south.
4. Ceiling of northern half of basement.
5. View of southern half of the basement from the north.
6. Ceiling of southern half of basement.
7. Water heaters near northern basement wall.
8. Heating ducts in northern half of basement.
9. Water heater on southern wall of basement.
10. Heating ducts in southern half of basement.
11. Assorted paints, chemicals, and oils.
12. Detergents and laundry products on dryer.
13. Summa canister and sub-slab sampling port for soil vapor sample 045162-95RFRANK-SS1.
14. Summa canister and sub-slab sampling port for soil vapor sample 045162-95RFRANK-SS1.



1



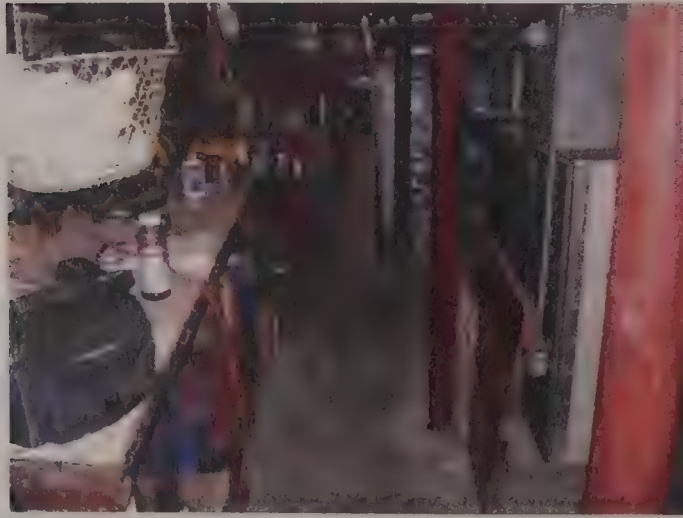
2



3



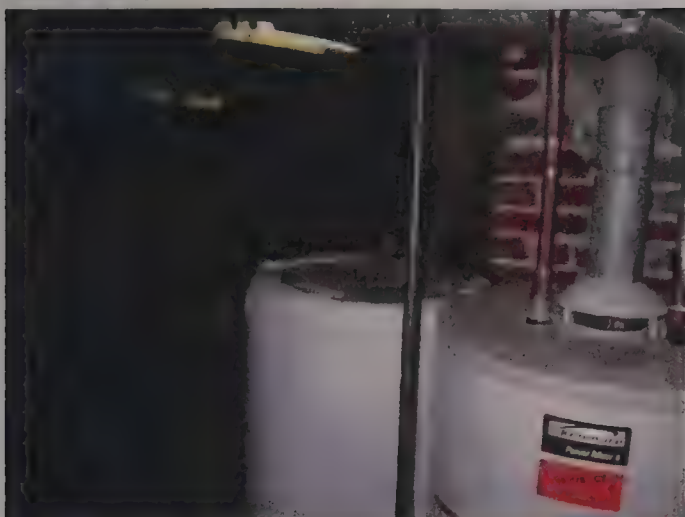
4



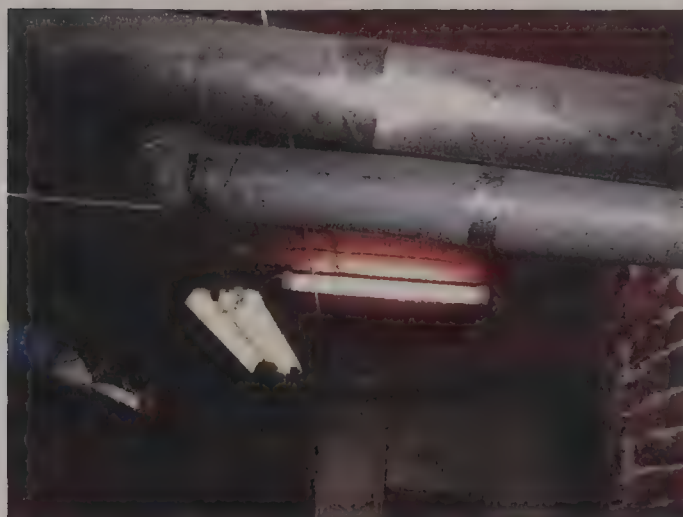
5



6



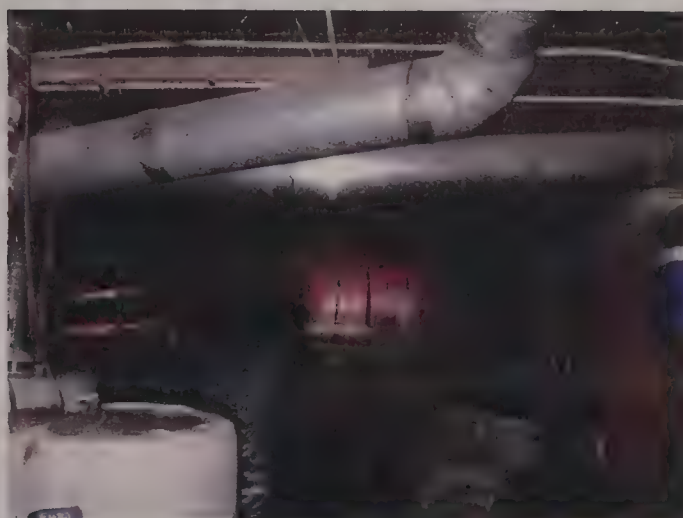
7



8



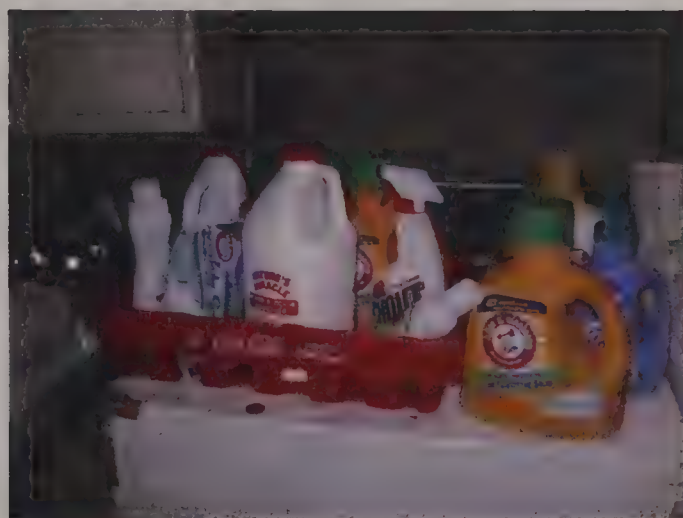
9



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11



12



13



14

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **T. Daigle**

Date: **3/21/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **11 Morton Street**

Property Contact: **Victoria Ngesina (Owner)**

Contact's Phone: Home:

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **5**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building: **Rebuilt in 2002 after a fire in 2001. Rebuilding included new concrete floor.**

Type of Ground Cover Around Outside of Building: **concrete & asphalt**

Number of Floors: Below grade: **1** At or above grade:

Basement Size: **894ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **brick/mortar above
stone/mortar**

Integrity: **Concrete; Good Integrity**

Foundation Integrity: **Moderate cracks or open
joints**

Basement Use: **Storage, recreation**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|--|-------------------------------------|---|---|
| <input type="checkbox"/> Basement sump
present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in
sump? | <input type="checkbox"/> Product in sump? |
|--|-------------------------------------|---|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input checked="" type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☒ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☐ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☒ Natural Gas
 ☐ Electric
 ☐ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☒ Insulation
 ☐ Storm Windows
 ☒ Energy Efficient Windows
- ☐ Other: fire 2001 rebuilt 2002

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	joint compound in exercise area near bulkhead	<input type="checkbox"/>
<input checked="" type="checkbox"/> Cleaning solvents	laundry soap near washer/dryer	<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **0 ppb throughout basement**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☒ When were dry-cleaned clothes last brought into the building? **monthly basis**

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? ~100 SF

PART VII – ADDITIONAL COMMENTS

Pool table, workout equipment in basement.

SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**

Project Number: **045162**

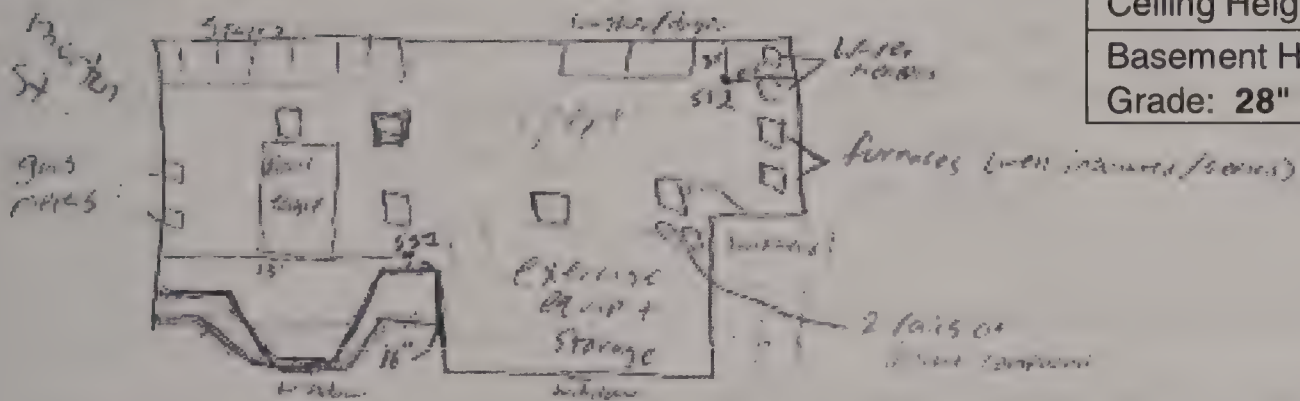
Address: **11 Morton Street**

Date: **3/21/2007**

Logged by: **T. Daigle**

Sub-Slab Monitoring Point IDs:
SS1 & SS2

Basement Sketch

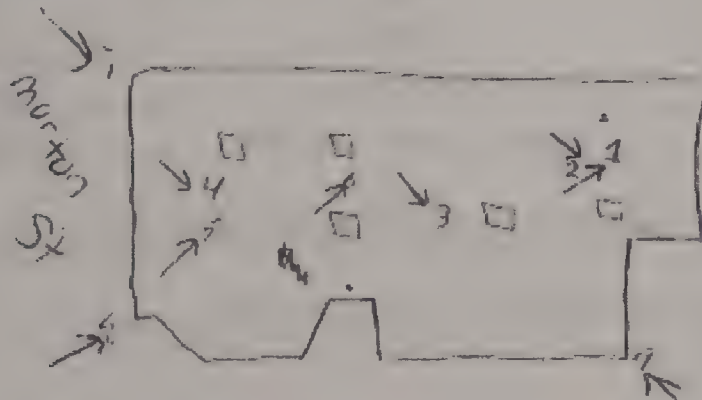


Ceiling Height: 7'4"

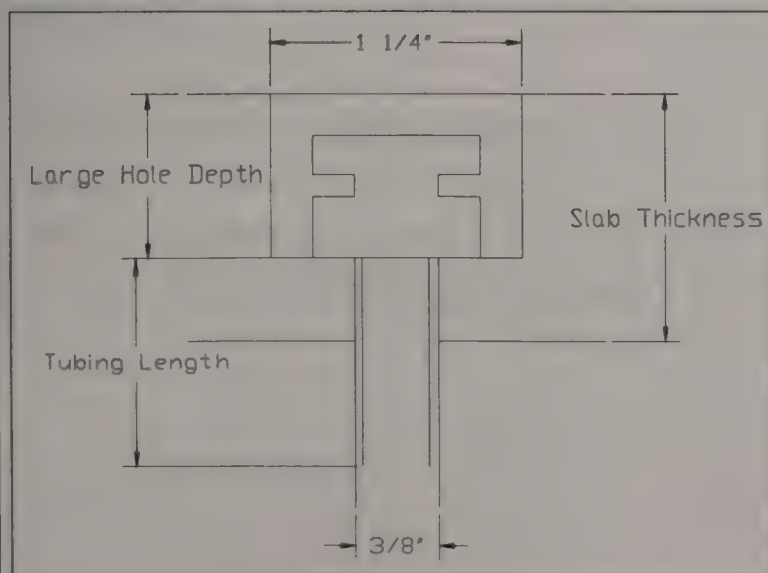
Basement Height Above
Grade: 28"

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	4"	4"		
Tubing Length:	1.5"	1.5"		
Type of Material Under Slab:	fine sand	fine sand		
Large Hole Depth:	1.5"	1.5"		

Comments:



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
11 Morton Street

Sample ID: **SS1**

Date: **03/21/2007**

Sampling personnel: **T. Daigle**

Summa Canister ID: **M142**

Flow Regulator ID: **MC046**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **10:45:00 AM**

Sampling Finish Time: **11:40:00 AM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

36.1

44.4

Barometric Pressure:

30.83

30.81

Prevailing Wind Direction:

W very light

none

General Weather Conditions:

sunny, calm mid 30's

sunny

Photographs taken before sampling? **Yes** If Yes, what time: **10:45:00 AM** Taken by:

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **0.000 in wc**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **0 ppb**

Amount of air purged prior to sampling: **~30 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
11 Morton Street

Sample ID: **SS2**

Date: **03/21/2007**
Sampling personnel: **T. Daigle**

Summa Canister ID: **M149**
Flow Regulator ID: **MC012**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **10:55:00 AM**
Sampling Finish Time: **11:49:00 AM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **31.5in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	36.1	44.4
Barometric Pressure:	30.83	30.81
Prevailing Wind Direction:	W very light	none
General Weather Conditions:	sunny, calm mid 30's	sunny

Photographs taken before sampling? **Yes** If Yes, what time: **10:55:00 AM** Taken by:

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **0.000**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **0 ppb**
Amount of air purged prior to sampling: **~30 liters**

Sub-Slab Installation Photo Log: 11 Morton Street (March 21, 2007)

1. Furnaces and water heaters in the northern corner of the basement
2. Eastern corner of the basement
3. Eastern corner of the basement
4. Eastern side of the basement
5. Northern corner of the basement
6. Laundry area in northern corner of the basement
7. Exterior view of the western side of the residence from the north
8. Exterior view of the eastern side of the residence from the north
9. Exterior view of the eastern side of the residence from the south
10. Summa canister set-up and sampling port for sub-slab soil vapor sample 045162-11Mort-SS1
11. Summa canister set-up and sampling port for sub-slab soil vapor sample 045162-11Mort-SS2



1



2



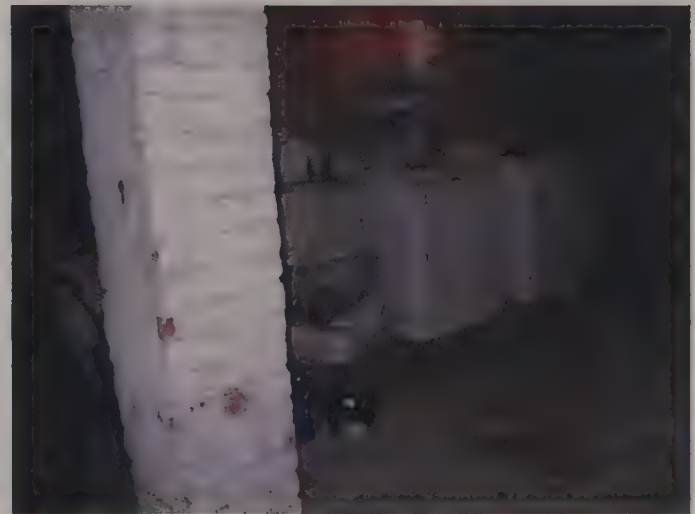
3



4



5



6



7



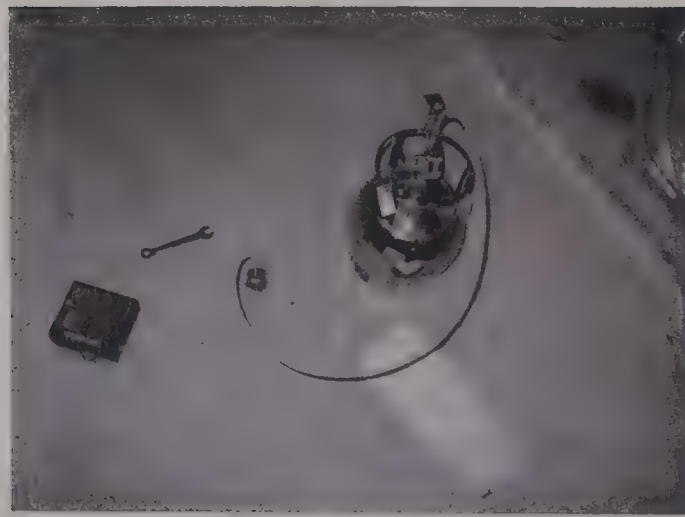
8



9



10



11

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **T. Daigle S. Slater**

Date: **3/22/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **29 Knowlton Street**

Property Contact: **Harry & Eileen Barnard (Owner)**

Contact's Phone: Home: **(781) 750-8115**

Work:

Cell: **6175903312**

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **4**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**

Describe Building: **Basement used to be used for ceramics classes. 3rd floor is attic (1/2).**

Type of Ground Cover Around Outside of Building: **Asphalt**

Number of Floors: Below grade: **1** At or above grade: **3**

Basement Size: **1018ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete & dirt**

Foundation Materials: **Stone & brick**

Integrity: **Concrete; Good Integrity**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|--|-------------------------------------|--|---|
| <input checked="" type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|--|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|--|--|---|--|
| <input checked="" type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input checked="" type="checkbox"/> Other: hot air-2nd. gas baseboard- 1st | | | |

Type of ventilation system:

- ☐ Central Air Conditioning
 ☒ Individual Air Conditioning Units
 ☒ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
 ☐ Other: both floors

Type of fuel utilized:

- ☒ Natural Gas
 ☐ Electric
 ☐ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☒ Insulation
 ☒ Storm Windows
 ☒ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input checked="" type="checkbox"/> Paints / thinners / strippers	mineral spirits, paints, finishers- shelving unit	<input type="checkbox"/>
<input checked="" type="checkbox"/> Cleaning solvents	on shelves at door	<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	on shelves at door	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input checked="" type="checkbox"/> Insecticides	on shelves at door	<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Yes**

Results of screening / comments: **0 ppb. Ceramics classes in slab portion of basement. Mr. Barnard has noticed sinkholes in asphalt near entrance of basement & end of driveway. Concerned that it might have to do w/ groundwater but basement never floods.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☒ How often? **outside only** Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? **50% of basement Square Footage**

PART VII – ADDITIONAL COMMENTS

Cracks in stone portion of foundation.

SUB-SLAB MONITORING POINT INSTALLATION LOG

Project Name: **Tufts Street**

Project Number: 045162

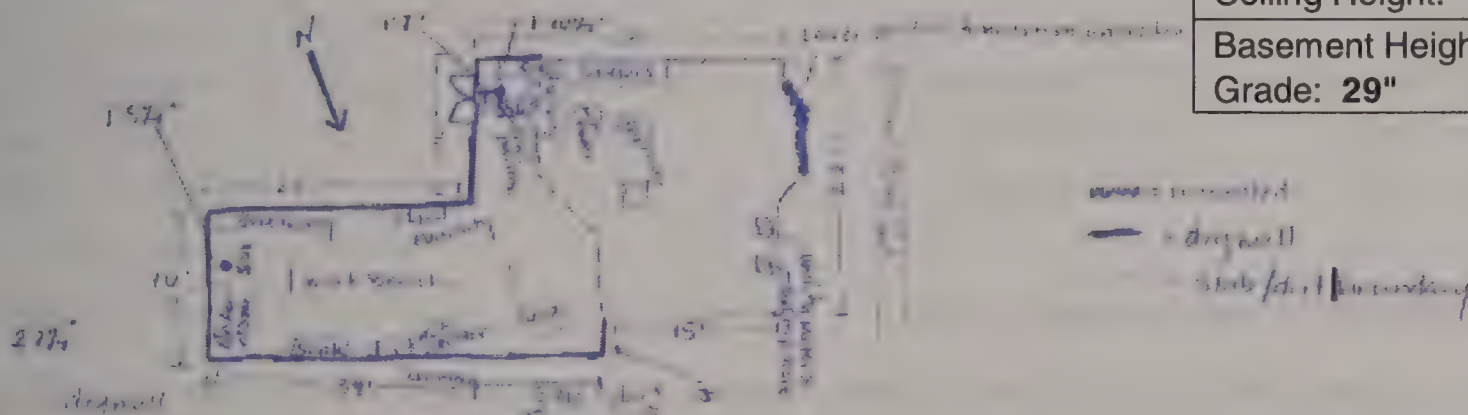
Address: **29 Knowlton Street**

Date: 3/22/2007

Logged by: **S. Slater**

Sub-Slab Monitoring Point IDs: SS1 & SS2

Basement Sketch



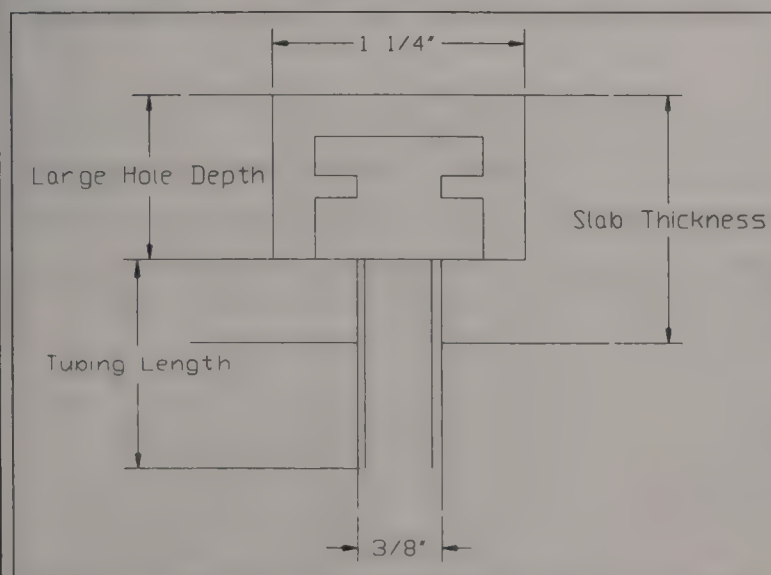
Ceiling Height: ~6.5'

Basement Height Above
Grade: **29"**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:

Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	2"	3 1/2"		
Tubing Length:	1/2"	1 1/2"		
Type of Material Under Slab:	fine sand	fine sand		
Large Hole Depth:	2 1/2"	3"		

Comments:



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
29 Knowlton Street

Sample ID: **SS1**

Date: **03/22/2007**
Sampling personnel: **T. Daigle S. Slater**

Summa Canister ID: **M092**
Flow Regulator ID: **MC097**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **1:37:00 PM**
Sampling Finish Time: **2:31:00 PM**

During Sampling	
Time	Vacuum
1:45:00 PM	25.5

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	60.2	60.9
Barometric Pressure:	30.11	30.06
Prevailing Wind Direction:	north	north
General Weather Conditions:	partly sunny	sunny

Photographs taken before sampling? **Yes** If Yes, what time: **1:40:00 PM** Taken by: **S. Slater**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **wind straight up Knowlton St towards school**

Vacuum prior to sampling: **0.000 in wc**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **239 ppb**
Amount of air purged prior to sampling: **~15 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
29 Knowlton Street

Sample ID: **SS2**

Date: **03/22/2007**
Sampling personnel: **T. Daigle S. Slater**

Summa Canister ID: **M045**
Flow Regulator ID: **MC082**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **1:43:00 PM**
Sampling Finish Time: **2:45:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	60.2	60.9
Barometric Pressure:	30.11	30.06
Prevailing Wind Direction:	north	north
General Weather Conditions:	partly sunny	sunny

Photographs taken before sampling? **Yes** If Yes, what time: **1:44:00 PM** Taken by: **S. Slater**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **hold. wind straight up Knowlton St towards school**

Vacuum prior to sampling: **0.004 in wc**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **wavered when tubing was moved otherwise 0 ppb**

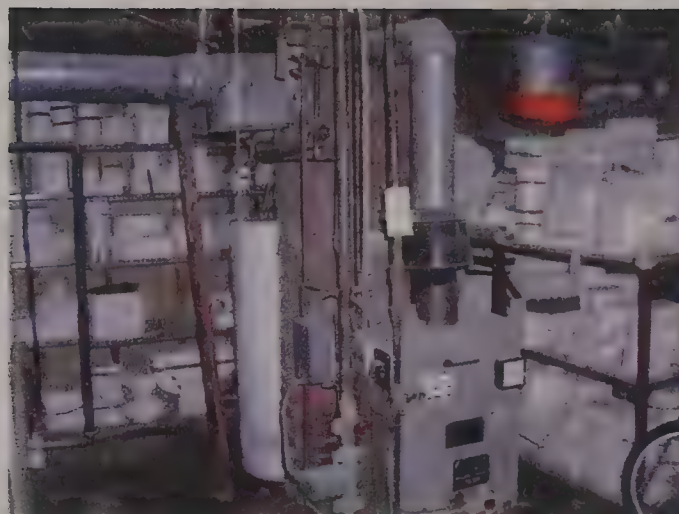
Amount of air purged prior to sampling: **~15 liters**

Sub-Slab Installation Photo Log: 29 Knowlton Street (March 22, 2007)

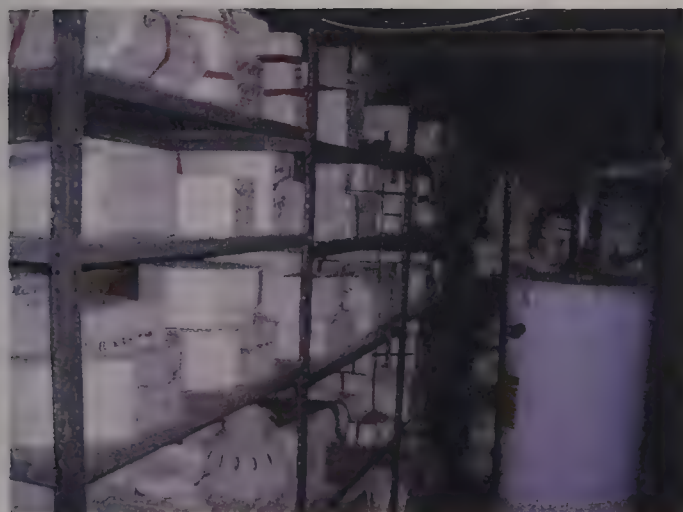
1. Utility meters on western basement wall.
2. Furnace and shelving in southwest corner of basement.
3. Hot water heater and shelving along eastern wall in southeast corner of basement.
4. Miscellaneous items on shelves at basement entrance.
5. Household cleaning and maintenance products on shelves at basement entrance.
6. Miscellaneous items on shelves at basement entrance.
7. Electricity meters and kiln in northwest corner of basement near slab-dirt boundary in floor.
8. Hot water heater along northeast corner of basement.
9. Shelving along southern wall of basement.
10. Workbench in center of slab portion of basement.
11. Summa canister setup and sub-slab soil vapor sampling port for sample 045162-29KNOW-SS1.
12. Summa canister setup and sub-slab soil vapor sampling port for sample 045162-29KNOW-SS1.



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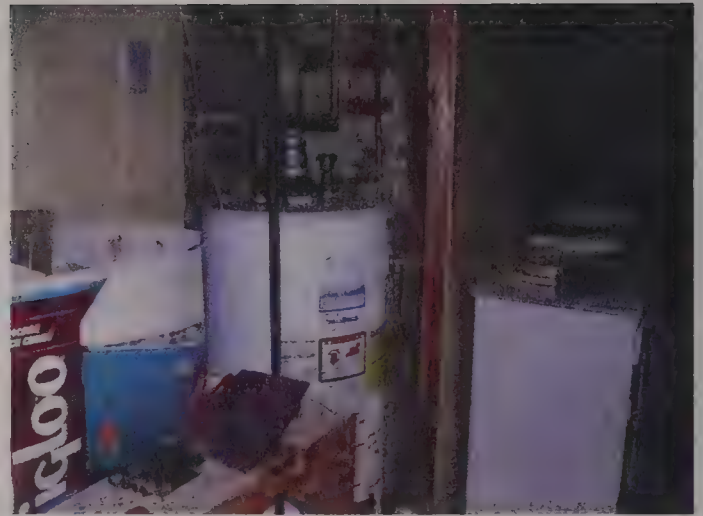
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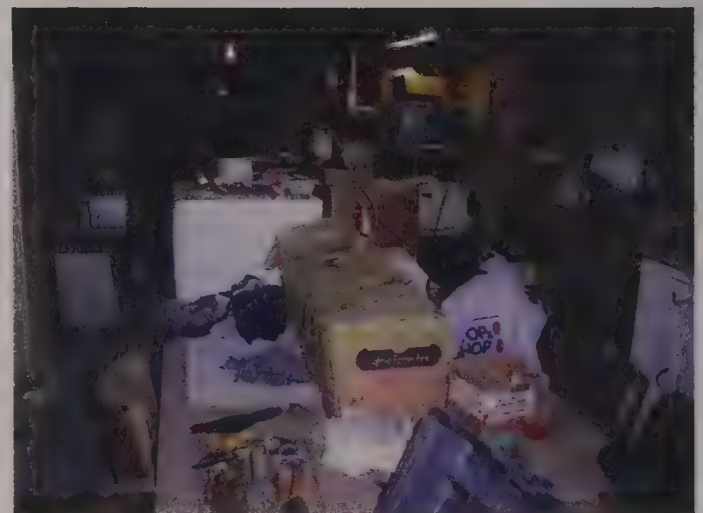
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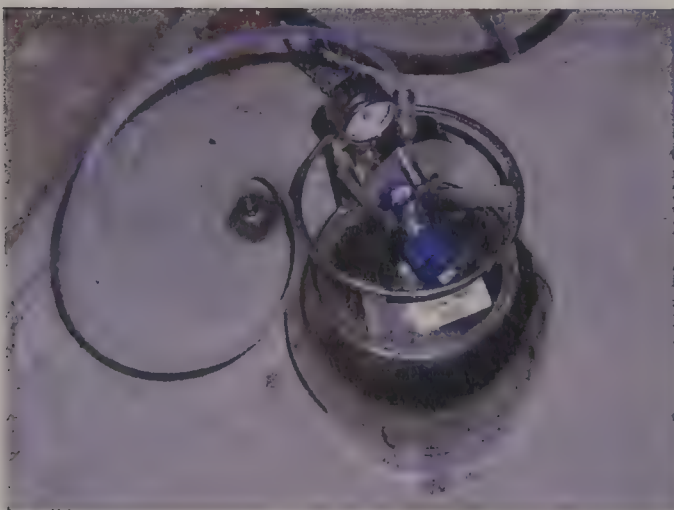
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12

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **S. Slater**

Date: **3/26/2007**

Site Name: **50 Tufts Street, Somerville, MA**

Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **82 Franklin Street**

Property Contact: **()**

Contact's Phone: Home:

Work:

Cell:

Building Occupants: Children under age 13: **0**

Children age 13-18: **0**

Adults: **0**

PART II – BUILDING CHARACTERISTICS

Building Type: **Single-family Residential**

Describe Building:

Type of Ground Cover Around Outside of Building: **Concrete**

Number of Floors: Below grade: **1** At or above grade: **2**

Basement Size: **624ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **Stone, walls sealed & painted**

Integrity: **Concrete; Good Integrity**

Foundation Integrity: **No cracks or open joints**

Basement Use: **Recreation or Living Space**

Moisture Conditions In Basement: **Dry**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input checked="" type="checkbox"/> Other: forced air | | | |

Type of ventilation system:

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> Central Air Conditioning | <input checked="" type="checkbox"/> Individual Air Conditioning Units | <input type="checkbox"/> Bathroom Ventilation Fans | <input type="checkbox"/> Mechanical Fans |
| <input type="checkbox"/> Kitchen Range Hood Fan | <input type="checkbox"/> Other: | | |

Type of fuel utilized:

- | | | | |
|---|-----------------------------------|-----------------------------------|---|
| <input checked="" type="checkbox"/> Natural Gas | <input type="checkbox"/> Electric | <input type="checkbox"/> Fuel Oil | <input type="checkbox"/> Wood |
| <input type="checkbox"/> Coal | <input type="checkbox"/> Solar | <input type="checkbox"/> Kerosene | <input type="checkbox"/> Outside (Fresh) Air Intake |

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Insulation | <input type="checkbox"/> Storm Windows | <input checked="" type="checkbox"/> Energy Efficient Windows |
| <input type="checkbox"/> Other: | | |

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input checked="" type="checkbox"/> Other house cleaning products	pledge, glass cleaners etc near washer	<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Not Applicable**

Results of screening / comments: **0 ppb**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need? **75 % of basement area**

PART VII – ADDITIONAL COMMENTS

SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**

Project Number: **045162**

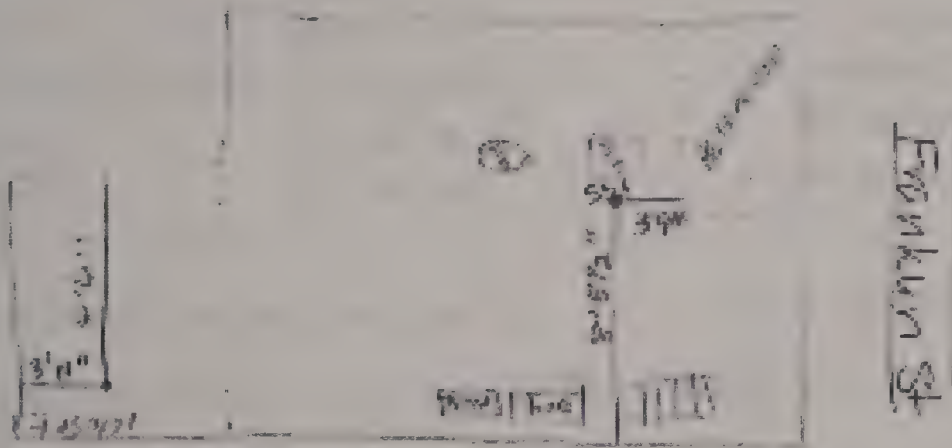
Address: **82 Franklin Street**

Date: **3/26/2007**

Logged by: **S. Slater**

Sub-Slab Monitoring Point IDs:
SS1 & SS2

Basement Sketch

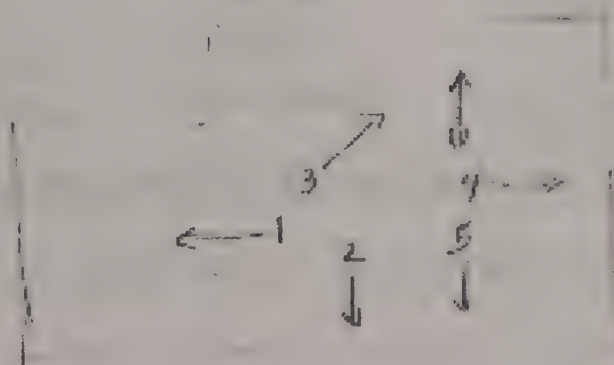


Ceiling Height: **5'8"**

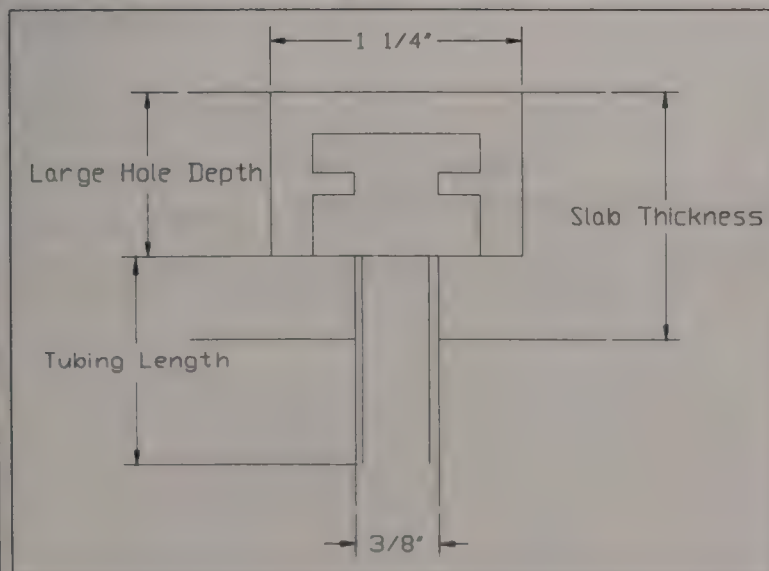
Basement Height Above
Grade:

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	4"	4"		
Tubing Length:	1 1/2"	1 1/2"		
Type of Material Under Slab:	none	fine sand		
Large Hole Depth:	1 1/2"	1 1/2"		

Comments:



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
82 Franklin Street

Sample ID: **SS1**

Date: **03/26/2007**

Sampling personnel: **S. Slater**

Summa Canister ID: **M106**

Flow Regulator ID: **MC089**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **2:26:00 PM**

Sampling Finish Time: **3:25:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **2.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	49.4	49.2
Barometric Pressure:	30.30	30.27
Prevailing Wind Direction:	none	none
General Weather Conditions:	drizzle cloudy	cloudy

Photographs taken before sampling? **Yes** If Yes, what time: **2:26:00 PM** Taken by: **S. Slater**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **0.000 in wic**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **~900 ppb & decreasing, stayed steady ~715 ppb**

Amount of air purged prior to sampling: **~30 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
82 Franklin Street

Sample ID: **SS2**

Date: **03/26/2007**

Sampling personnel: **S. Slater**

Summa Canister ID: **M059**

Flow Regulator ID: **MC063**

Sample Type / Analysis Method: **TO15/Summa**

Sampling Start Time: **2:37:00 PM**

Sampling Finish Time: **3:32:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **28 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):

Before Sampling

After Sampling

Temperature:

49.4

49.2

Barometric Pressure:

30.30

30.27

Prevailing Wind Direction:

none

none

General Weather Conditions:

drizzle, cloudy

cloudy

Photographs taken before sampling? **Yes** If Yes, what time: **2:37:00 PM** Taken by:

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **0.000 in wc**

Ambient air concentration: **0 ppb**

Soil gas concentration prior to sampling: **150 ppb**

Amount of air purged prior to sampling: **~30 liters**

Sub-slab Installation Photo Log: 82 Franklin Street (March 26, 2007)

1. Western room of basement.
2. Detergents along northern wall next to washer and dryer.
3. Water heater in the center of basement.
4. Utility meter on east wall of basement near the base of stairs.
5. Washer and dryer along northern wall of basement.
6. Furnace in center of basement.
7. Summa canister setup and sub-slab soil vapor sampling port for sample 045162-82FRANK-SS1.
8. Summa canister setup and sub-slab soil vapor sampling port for sample 045162-82FRANK-SS1.



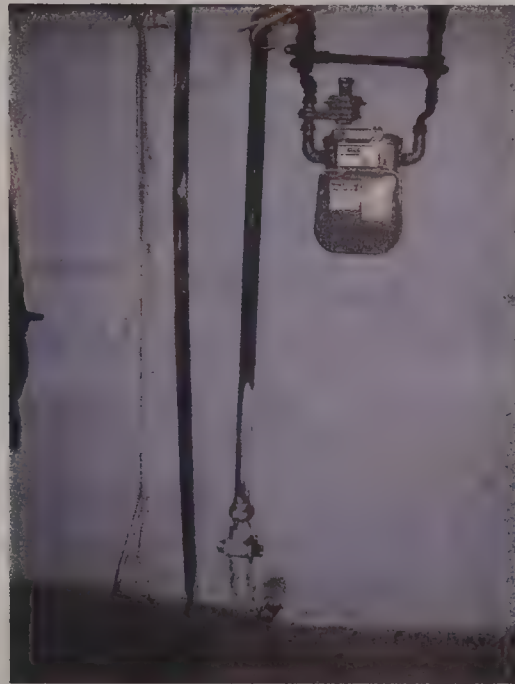
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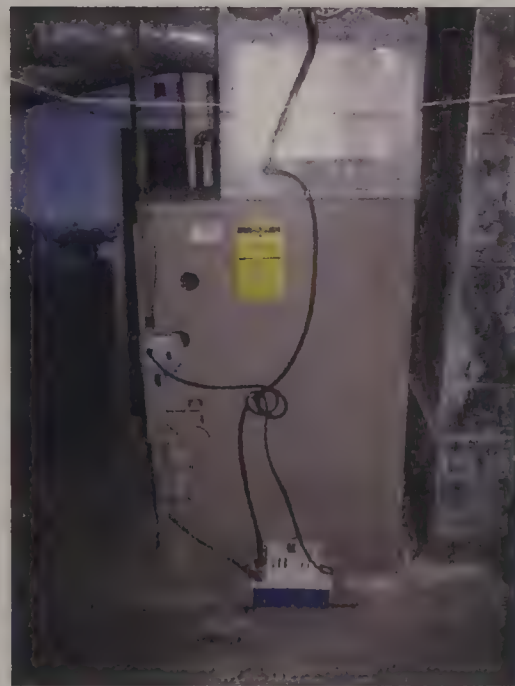
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PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **S. Slater K. Wolfe**
Site Name: **50 Tufts Street, Somerville, MA**

Date: **3/26/2007**
Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **12-14 Knowlton Street**
Property Contact: **Daniane Borges (Owner)**
Contact's Phone: Home: **(617) 764-2269**
Building Occupants: Children under age 13: **0**

Work: _____ Cell: _____
Children age 13-18: **0** Adults: **11**

PART II – BUILDING CHARACTERISTICS

Building Type: **Multi-family Residential**
Describe Building: _____

Type of Ground Cover Around Outside of Building: **Concrete Asphalt**

Number of Floors: Below grade: _____ At or above grade: **3**

Basement Size: **1197ft²**

Foundation Type: **Full Basement**

Basement Floor: **Concrete**

Foundation Materials: **Stone**

Integrity: **Concrete with Cracks-very few**

Foundation Integrity: **Moderate cracks or open joints**

Basement Use: **Storage; Infrequent Use**

Moisture Conditions In Basement: **Damp- 1/2 of basement**

Flood History/Actions Taken:

<input checked="" type="checkbox"/> Basement sump present?	<input type="checkbox"/> Sump pump?	<input type="checkbox"/> Standing water in sump?	<input type="checkbox"/> Product in sump?
--	-------------------------------------	--	---

Type of heating system:

<input type="checkbox"/> Hot Air Circulation	<input type="checkbox"/> Hot Air Radiation	<input type="checkbox"/> Wood	<input type="checkbox"/> Steam Radiation
<input checked="" type="checkbox"/> Hot Water Radiation	<input type="checkbox"/> Kerosene Heater	<input type="checkbox"/> Electric Baseboard	<input type="checkbox"/> Heat Pump
<input type="checkbox"/> Other: _____			

Type of ventilation system:

- ☐ Central Air Conditioning
 ☐ Individual Air Conditioning Units
 ☐ Bathroom Ventilation Fans
 ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan
 ☐ Other:

Type of fuel utilized:

- ☒ Natural Gas
 ☐ Electric
 ☐ Fuel Oil
 ☐ Wood
- ☐ Coal
 ☐ Solar
 ☐ Kerosene
 ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☐ Insulation
 ☐ Storm Windows
 ☐ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCES

Other stationary sources nearby (gas stations, emission stacks, etc.):

PART IV – INDOOR CONTAMINANT SOURCES

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor? **Yes**

PID screening of cracks in wall/ floor and/or wall/floor interface: **Yes**

PID screening above space above drain sump? **Yes**

Results of screening / comments: **0 ppb on pipes & cracks. Took lid off sump & read ~1000 ppb.**

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☒

Does the building have an attached garage? **No Garage** If so, is a car usually parked in the garage? ☐

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

1/2 of the basement was dirt, but owner poured concrete to extend existing slab. Foundation material consists of 3' of bricks and poured concrete.



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
12-14 Knowlton Street

Sample ID: **SS1**

Date: **03/26/2007**
Sampling personnel: **S. Slater K. Wolfe**

Summa Canister ID: **M086**
Flow Regulator ID: **MC090**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **5:03:00 PM**
Sampling Finish Time: **6:01:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **30 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **4.5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	42.0	40.1
Barometric Pressure:	30.22	30.17
Prevailing Wind Direction:	none	none
General Weather Conditions:	drizzle	drizzle

Photographs taken before sampling? **Yes** If Yes, what time: **5:03:00 PM** Taken by: **S. Slater**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **0.000 in wc**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **0 ppb**
Amount of air purged prior to sampling: **~30 liters**



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
12-14 Knowlton Street

Sample ID: **12-Know-SS2**

Date: **03/26/2007**
Sampling personnel: **S. Slater K. Wolfe**

Summa Canister ID: **M143**
Flow Regulator ID: **MC091**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **5:13:00 PM**
Sampling Finish Time: **6:03:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	42.0	40.1
Barometric Pressure:	30.22	30.17
Prevailing Wind Direction:	none	none
General Weather Conditions:	drizzle	drizzle

Photographs taken before sampling? **Yes** If Yes, what time: **5:13:00 PM** Taken by: **S. Slater**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments:

Vacuum prior to sampling: **0.000 in wc**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **0 ppb**
Amount of air purged prior to sampling: **~30 liters**

Sub-Slab Installation Photo Log: 12-14 Knowlton Street (March 26, 2007)

1. View of central basement area floor from the north.
2. View of central basement area ceiling from the north
3. View of floor and eastern wall of basement from the north.
4. View of ceiling and eastern wall of basement from the north.
5. Miscellaneous items in northernmost storage room on western wall
6. Cleaners in northernmost storage room on western wall
7. Stored items including an a/c unit and windshield wiper fluid in central storage room along western wall.
8. Tires and camping gear in southernmost storage room along western wall.
9. Plywood and furniture in southwest corner of basement.
10. Drain and furnaces in SE corner at front of basement.
11. Summa canister setup and sub-slab soil vapor sampling port for sample 0415162-12KNOW-SS1.
12. Summa canister setup and sub-slab soil vapor sampling port for sample 0415162-12KNOW-SS1.



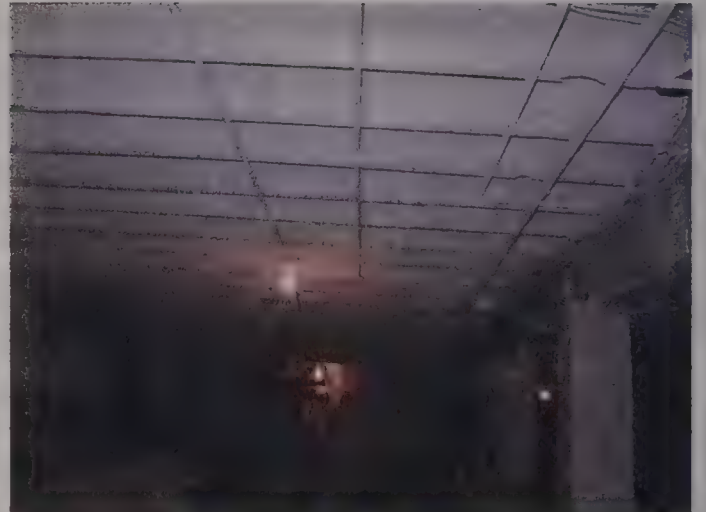
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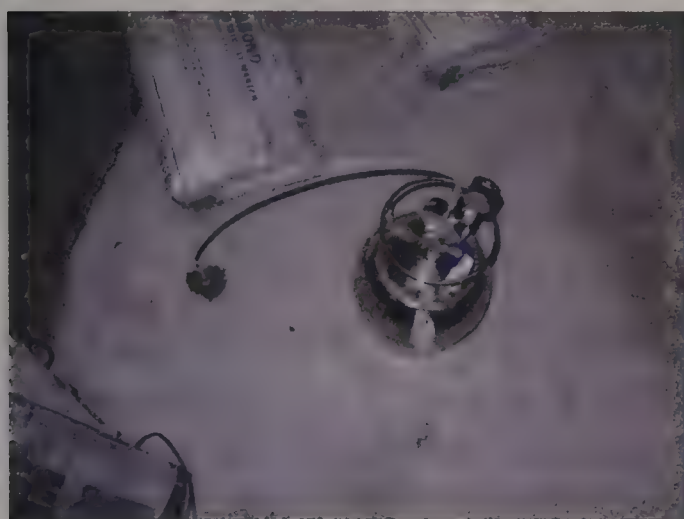
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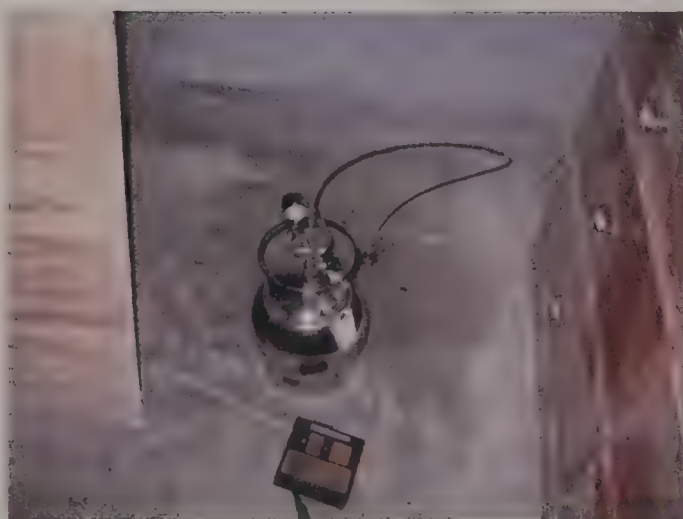
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10



11



12

PRE-SAMPLING FIELD CHECKLIST AND OBSERVATIONS – Sub-Slab



Survey Completed by: **S. Slater T. Daigle**
Site Name: **50 Tufts Street, Somerville, MA**

Date: **3/29/2007**
Case #: **04516-2**

PART I - OCCUPANTS

Building Address: **85 Washington Street**

Property Contact: **Jae Sodrinho (Owner)**

Contact's Phone: Home: **(781) 632-0582**

Work: **6176283130**

Cell: **6172028604**

Building Occupants: Children under age 13: **30**

Children age 13-18: **30**

Adults: **200**

PART II – BUILDING CHARACTERISTICS

Building Type: **Commerical**

Describe Building: **Large building with attached garage/parking lot that opens on Franklin Street**

Type of Ground Cover Around Outside of Building: **Asphalt gravel**

Number of Floors: Below grade: **0** At or above grade: **1**

Basement Size: **20104ft²**

Foundation Type: **slab on grade**

Basement Floor: **concrete**

Foundation Materials: **unknown**

Integrity:

Foundation Integrity: **No cracks or open joints**

Basement Use:

Moisture Conditions In Basement: **N/A**

Flood History/Actions Taken:

- | | | | |
|---|-------------------------------------|--|---|
| <input type="checkbox"/> Basement sump present? | <input type="checkbox"/> Sump pump? | <input type="checkbox"/> Standing water in sump? | <input type="checkbox"/> Product in sump? |
|---|-------------------------------------|--|---|

Type of heating system:

- | | | | |
|---|--|---|--|
| <input checked="" type="checkbox"/> Hot Air Circulation | <input type="checkbox"/> Hot Air Radiation | <input type="checkbox"/> Wood | <input type="checkbox"/> Steam Radiation |
| <input type="checkbox"/> Hot Water Radiation | <input type="checkbox"/> Kerosene Heater | <input type="checkbox"/> Electric Baseboard | <input type="checkbox"/> Heat Pump |
| <input type="checkbox"/> Other: | | | |

Type of ventilation system:

- ☒ Central Air Conditioning ☐ Individual Air Conditioning Units ☐ Bathroom Ventilation Fans ☐ Mechanical Fans
- ☐ Kitchen Range Hood Fan ☐ Other:

Type of fuel utilized:

- ☒ Natural Gas ☐ Electric ☐ Fuel Oil ☐ Wood
- ☐ Coal ☐ Solar ☐ Kerosene ☐ Outside (Fresh) Air Intake

Septic system? **No**Irrigation/private well? **No**Existing subsurface depressurization (radon) system in place? **No Radon System**

Has the building been weatherized with any of the following:

- ☒ Insulation ☒ Storm Windows ☒ Energy Efficient Windows
- ☐ Other:

PART III – OUTDOOR CONTAMINANT SOURCESOther stationary sources nearby (gas stations, emission stacks, etc.): **Railroad****PART IV – INDOOR CONTAMINANT SOURCES**

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room), and whether the item was removed from the building 48 hours prior to indoor air sampling event.

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Gasoline storage cans		<input type="checkbox"/>
<input type="checkbox"/> Gas-powered equipment		<input type="checkbox"/>
<input type="checkbox"/> Kerosene storage cans		<input type="checkbox"/>
<input type="checkbox"/> Paints / thinners / strippers		<input type="checkbox"/>
<input type="checkbox"/> Cleaning solvents		<input type="checkbox"/>
<input type="checkbox"/> Oven cleaners		<input type="checkbox"/>

Potential Sources	Location(s)	Removed Prior to Sampling?
<input type="checkbox"/> Carpet / upholstery cleaners		<input type="checkbox"/>
<input type="checkbox"/> Other house cleaning products		<input type="checkbox"/>
<input type="checkbox"/> Moth balls		<input type="checkbox"/>
<input type="checkbox"/> Polishes / waxes		<input type="checkbox"/>
<input type="checkbox"/> Insecticides		<input type="checkbox"/>
<input type="checkbox"/> Furniture / floor polish		<input type="checkbox"/>
<input type="checkbox"/> Nail polish / polish remover		<input type="checkbox"/>
<input type="checkbox"/> Hairspray		<input type="checkbox"/>
<input type="checkbox"/> Cologne / perfume		<input type="checkbox"/>
<input type="checkbox"/> Air fresheners		<input type="checkbox"/>
<input type="checkbox"/> Fuel tank (inside building)	If Yes is, is there an odor near tank?	NA
<input type="checkbox"/> Wood stove or fireplace		NA
<input type="checkbox"/> New furniture / upholstery		<input type="checkbox"/>
<input type="checkbox"/> New carpeting / flooring		NA
<input type="checkbox"/> Recent painting in building?		NA
<input type="checkbox"/> Hobbies - glues, paints, etc.		<input type="checkbox"/>

PART V – PID SCREENING - USE ADDITIONAL SHEETS IF NECESSARY

PID screening of annular space around utility pipes through basement wall / floor?

PID screening of cracks in wall/ floor and/or wall/floor interface:

PID screening above space above drain sump?

Results of screening / comments:

PART VI – MISCELLANEOUS ITEMS

Do any occupants of the building smoke? ☐ How often? Has anyone smoked within the building within the last 48 hours? ☐

Does the building have an attached garage? **Yes, Attached Garage** If so, is a car usually parked in the garage? ☒

Do the occupants of the building have their clothes dry-cleaned? ☐ When were dry-cleaned clothes last brought into the building?

Have the occupants ever noticed any unusual odors in the building? ☐ Describe (with location):

Any known spills of a chemical immediately outside or inside the building? ☐ Describe (with location):

Have any pesticides/herbicides been applied around the building foundation or in the yard/gardens? ☐ If so, when and which chemicals?

What is the quantity of goods in the basement? As in, if we were to temporarily store all of the goods from the basement, approximately how large of an area would we need?

PART VII – ADDITIONAL COMMENTS

Almost all people listed in the occupants section only in building during services on Sun & Wed. Basement size refers to total square feet of first floor, as there is no basement

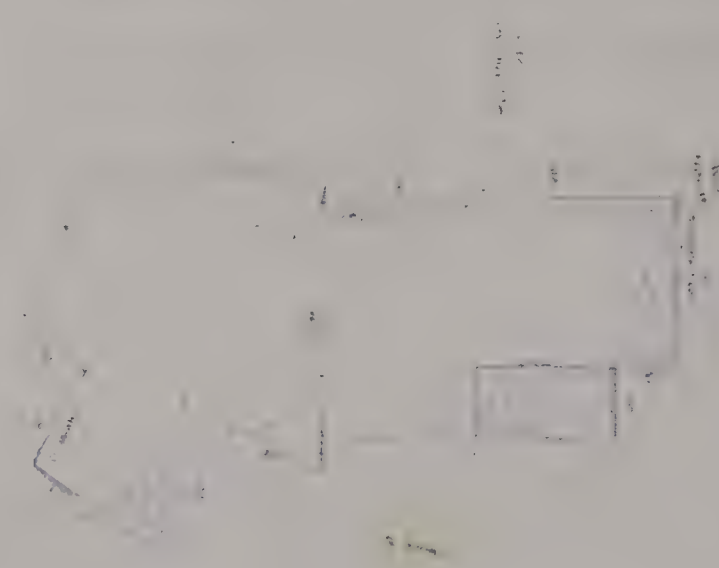
SUB-SLAB MONITORING POINT INSTALLATION LOG



Project Name: **Tufts Street**
 Project Number: **045162**
 Address: **85 Washington Street**
 Date: **3/29/2007**
 Logged by: **S. Slater T. Daigle**

Sub-Slab Monitoring Point IDs:
SS1 and SS2

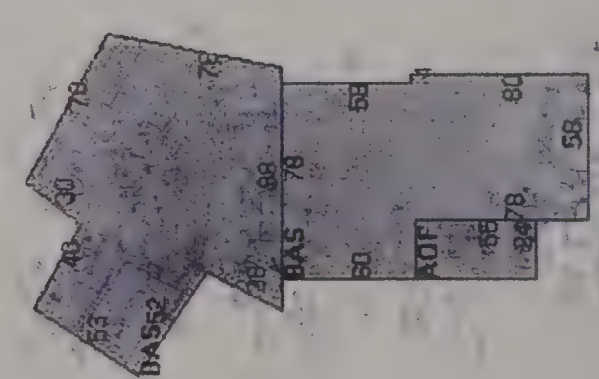
Basement Sketch



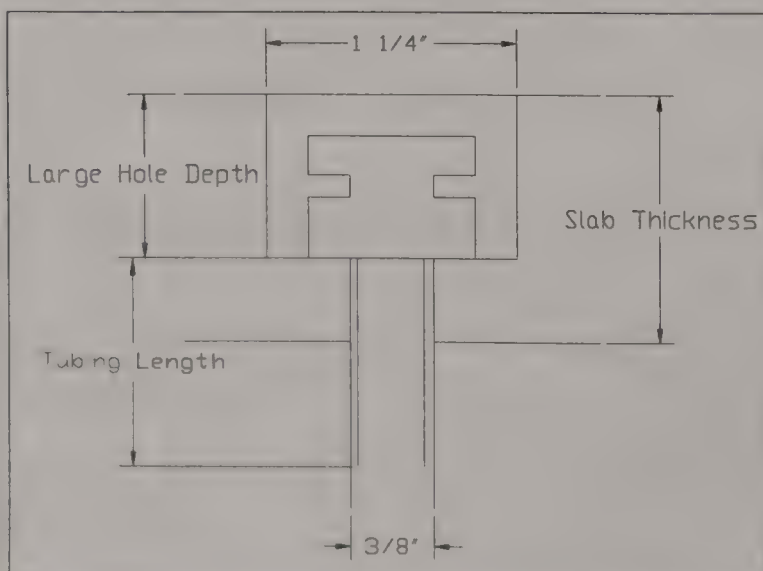
Ceiling Height: **varies**
 Basement Height Above Grade: **NA**

Include: Wall lengths, sump dimension and location, dimensions and locations of any significant penetrations in the ground, sub-slab monitoring point locations, location of sealed vs. non-sealed walls, north arrow

Basement Sketch for Photo Log:



Sub-Slab Monitoring Point Profile



	SS1	SS2	SS3	SS4
Slab Thickness:	4.75	9		
Tubing Length:	2.375	5.5		
Type of Material Under Slab:	sand	silt		
Large Hole Depth:	2	2		

Comments: SS2 was only monitoring point sampled



SUB-SLAB SAMPLING CHECKLIST

Sampling Location:
85 Washington Street

Sample ID: **SS2**

Date: **03/29/2007**
Sampling personnel: **S. Slater T. Daigle**

Summa Canister ID: **M051**
Flow Regulator ID: **MC084**
Sample Type / Analysis Method: **TO15/Summa**
Sampling Start Time: **2:46:00 PM**
Sampling Finish Time: **3:42:00 PM**

During Sampling	
Time	Vacuum

Did Summa Canister go to ambient pressure? **No**

Pressure gauge reading (Pre-opening): Flow Controller: **29 in/hr**

Pressure gauge reading (After sample collected): Flow Controller: **5 in/hr**

Environmental Conditions (Outside):	<u>Before Sampling</u>	<u>After Sampling</u>
Temperature:	55	55
Barometric Pressure:	30.25	30.25
Prevailing Wind Direction:	East	East
General Weather Conditions:	sunny,windy	sunny,windy

Photographs taken before sampling? **Yes** If Yes, what time: **2:48:00 PM** Taken by: **S. Slater**

Photographs taken after sampling? **No** If Yes, what time: **NA** Taken by: **NA**

Comments: **Only sample collected at this address**

Vacuum prior to sampling: **-0.005 in wc**
Ambient air concentration: **0 ppb**
Soil gas concentration prior to sampling: **0 ppb**
Amount of air purged prior to sampling: **~30 liters**

Sub-Slab Installation Photo Log: 85 Washington Street (March 29, 2007)

1. View of the parking garage from the double-door entrance behind the auditorium.
2. View of parking garage from the double-door entrance behind the auditorium.
3. View of parking garage from the double-door entrance behind the auditorium.
4. Electrical closet in southwest corner of auditorium
5. View of auditorium from main entrance looking north
6. Sprinkler room closet in southeast corner of building
7. View of auditorium from the southeast
8. Marble floor and bookshelves in lobby
9. View from lobby looking down hallway with offices on left, auditorium on right
10. Lobby entrance
11. Main entrance. (Lobby entrance is just out of frame to the left)
12. Cleaning closet near the lobby/office area
13. Cleaning closet near the lobby/office area
14. Garage door in enclosed parking lot/garage
15. View of storage area along the south wall of the garage entrance
16. Scrap wood in garage
17. Summa canister set-up and sampling port for sub-slab soil vapor sample 045162-85Wash-SS1



1



2



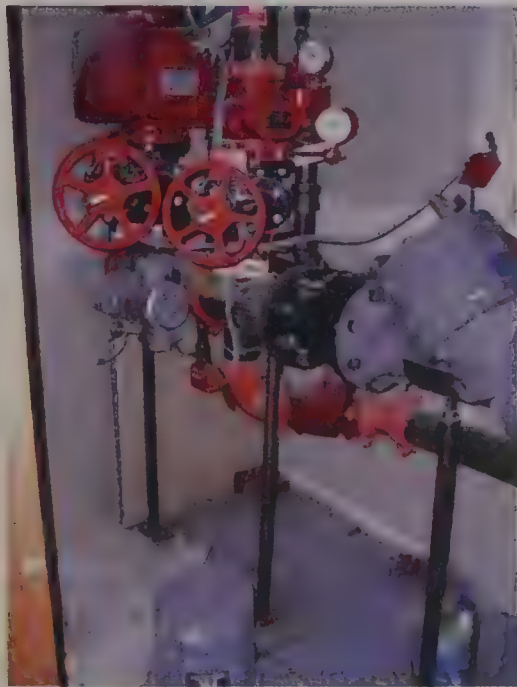
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6



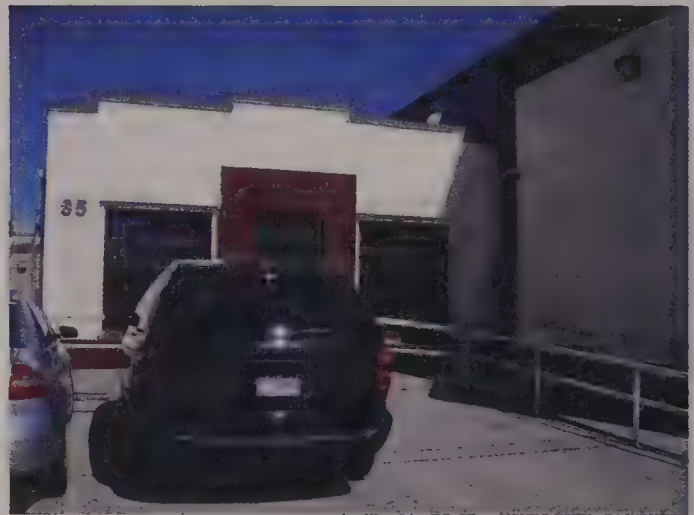
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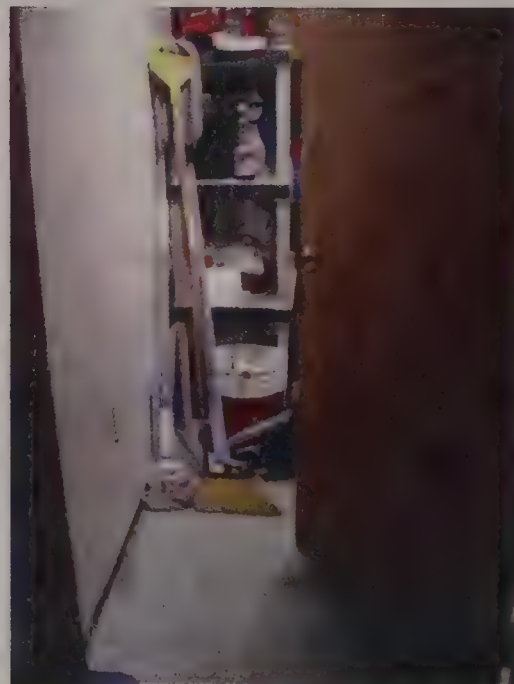
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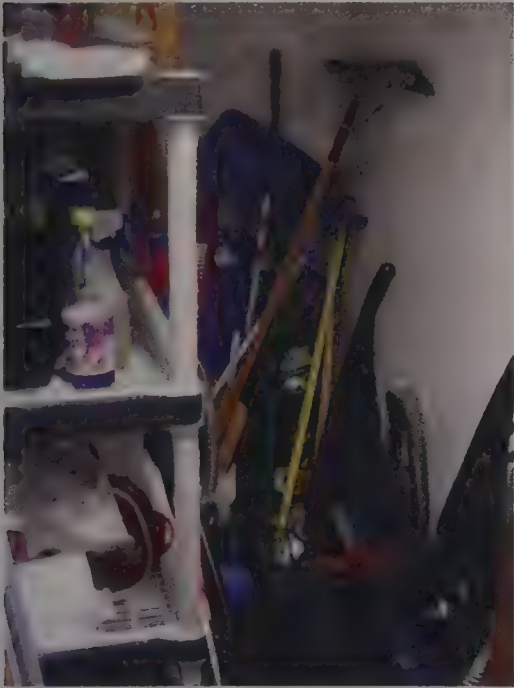
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12



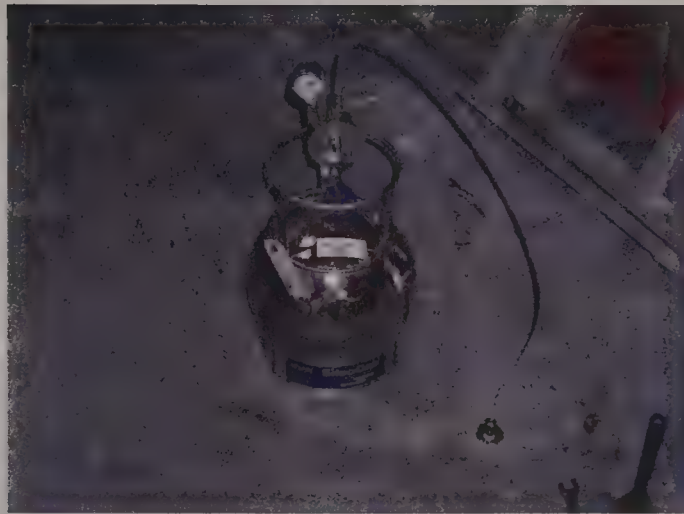
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14



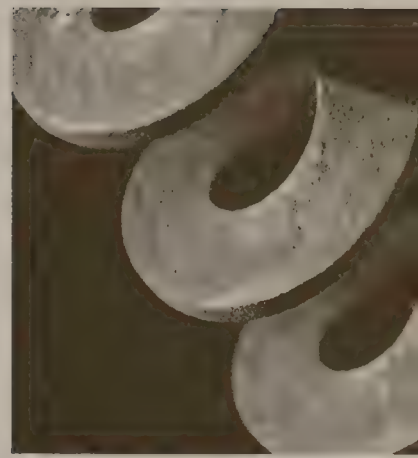
15



16



Geotechnical
Environmental and
Water Resources
Engineering



Appendix J

Boring Logs and Monitoring Well Installation Logs



GEI Consultants, Inc.
400 Unicorn Park
Woburn, MA 01801

PROJECT NAME: 50 Tufts Street

CITY/STATE: Somerville, Massachusetts

GEI PROJECT NUMBER: 045162

BORING LOG

PAGE
1 of 1

MW106

DRILLING METHOD: Vac. Ex./Geoprobe

GROUND SURFACE ELEVATION (FT): 26.9

NORTHING: 2964857.6

EASTING: 767140.4

DRILLED BY: Geosearch S. Law

LOGGED BY: K. Wolfe

LOCATION: Corner of Dell & Tufts Street (Sidewalk)

TOTAL DEPTH (FT): 21

VERT. DATUM: NAVD 1988

HOR. DATUM: MA State Plane (NAD 83)

DATE START / END: 1/3/2007 - 1/5/2007

DEPTH FT.	SAMPLE INFORMATION					LITHOLOGY	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)		
0							Vacuum Excavated to 6'.
0-5"							Concrete
5-72"							WIDELY GRADED SAND WITH GRAVEL (SW); ~80% fine to coarse sand, ~15% fine gravel, ~5% nonplastic silty fines, 6" lens of white dust/ash at 36", dry, brown, FILL.
0.7					(Vac)		
6	S1	60	44	NM	6.4 (S1a)		S1a (0-10"): WIDELY GRADED SAND WITH GRAVEL (SW); ~75% fine to coarse sand, ~20% gravel up to 1/2" diameter, ~5% nonplastic silty fines, dry, brown, FILL.
8					0.0 (S1b)		S1b (10-12"): WIDELY GRADED SAND WITH GRAVEL (SW); ~65% fine to coarse sand, ~30% gravel up to 1/2" diameter, ~5% nonplastic silty fines, trace roots, dry, very dark brown, FILL.
10					0.0 (S1c)		S1c (12-44"): SANDY SILT W/GRAVEL (ML); ~60% nonplastic silty fines, ~20% fine to coarse sand, ~20% gravel up to 1/2" diameter, lens of silt from 29-32", dry, light brown, TILL.
12	S2	60	45	NM	0.0 (S2a)		S2a (0-24"): SILTY SAND (SM); ~60% fine to coarse sand, ~30% nonplastic silty fines, ~10% fine gravel, dry, light brown, TILL.
14					0.0 (S2b)		S2b (24-45"): NARROWLY GRADED SAND (SP); ~90% fine sand, ~10% nonplastic silty fines, wet, light brown, TILL.
16	S3	60	44	NM	0.0 (S3a)		S3a: Similar to S2b (24-45"), TILL.
18							
20							
							Bottom of borehole at 21'. No refusal.

ABBREVIATIONS:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED
(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Vac. Ex. = VACUUM EXCAVATION
HSA = HOLLOW STEM AUGER

NOTES:

Boring vacuum excavated to 6.0 feet, backfilled with cuttings and cold-patched on January 3, 2007. Boring completed with Geoprobe on January 5, 2007. No blow counts are collected during Geoprobe drilling. Monitoring well with soil gas sampling port installed. Environmental samples taken from 2'-4', 12'-14', and 16'-18'.

LITHOLOGY:



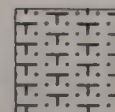
ASPHALT/
CONCRETE



FILL



TILL



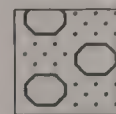
SILTY
SAND



ORGANIC
SOIL



SILT



SAND AND
GRAVEL



BEDROCK

DRILLING METHOD: Vac. Ex./Geoprobe
GROUND SURFACE ELEVATION (FT): 15.1
NORTHING: 2964836.82 EASTING: 767354.2
DRILLED BY: Geosearch S. Law
LOGGED BY: K. Wolfe

LOCATION: In Front of 14 Dell Street (Sidewalk)
TOTAL DEPTH (FT): 21
VERT. DATUM: NAVD 1988
HOR. DATUM: MA State Plane (NAD 83)
DATE START / END: 1/3/2007 - 1/5/2007

DEPTH FT.	SAMPLE INFORMATION					LITHOLOGY	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)		
0							Vacuum Excavated to 6'. 0-5": Concrete 5-60": WIDELY GRADED SAND WITH GRAVEL (SW); ~75% fine to coarse sand, ~20% fine gravel, ~5% nonplastic silty fines, wet at 51", brown, FILL. 60-72": SANDY SILT WITH GRAVEL (ML); ~50% nonplastic silty fines, ~25% fine to coarse sand, ~25% fine gravel, wet, brown, FILL.
2					0.0 (Vac)		
4							
6	S1	60	57	NM	0.0 (S1a)		S1a (0-16"): SILTY SAND WITH GRAVEL (SM); ~70% fine to coarse sand, ~15% nonplastic silty fines, ~15% fine gravel, wet, light brown, FILL.
8					0.0 (S1b)		S1b (16-57"): SILT (ML); ~90% nonplastic silty fines, ~10% fine sand, wet, gray, SILT.
10							
12	S2	60	49	NM	0.0 (S2a)		S2a: Similar to S1b (16-57"), SILT.
14							
16	S3	60	48	NM	0.0 (S3a)		S3a (0-36"): Similar to S1b (16-57"), SILT.
18					0.0 (S3b)		S3b (36-48"): WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~75% fine to coarse sand, ~15% gravel up to 1/2" diameter, ~10% nonplastic silty fines, wet, gray, TILL.
20							Bottom of borehole at 21'. No refusal.

ABBREVIATIONS:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED
(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Vac. Ex. = VACUUM EXCAVATION
HSA = HOLLOW STEM AUGER

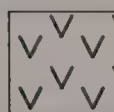
NOTES:

Boring vacuum excavated to 6.0 feet, backfilled with cuttings and cold-patched on January 3, 2007. Boring completed with Geoprobe on January 5, 2007. No blow counts are collected during Geoprobe drilling. Monitoring well with soil gas sampling port installed. Environmental samples taken from 2'-4', 7'-9', and 20'-21'.

LITHOLOGY:



ASPHALT/
CONCRETE



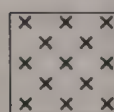
FILL



TILL



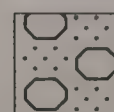
SILTY
SAND



ORGANIC
SOIL



SILT



SAND AND
GRAVEL



BEDROCK



GEI Consultants, Inc.
400 Unicorn Park
Woburn, MA 01801

PROJECT NAME: 50 Tufts Street

CITY/STATE: Somerville, Massachusetts

GEI PROJECT NUMBER: 045162

BORING LOG

PAGE
1 of 1

MW108

DRILLING METHOD: Vac. Ex./Geoprobe

GROUND SURFACE ELEVATION (FT): 13.1

NORTHING: 2964765.16

EASTING: 767550.1

DRILLED BY: Geosearch S. Law

LOGGED BY: K. Wolfe

LOCATION: Corner of Dell and Glen Street (Sidewalk)

TOTAL DEPTH (FT): 21

VERT. DATUM: NAVD 1988

HOR. DATUM: MA State Plane (NAD 83)

DATE START / END: 1/3/2007 - 1/5/2007

DEPTH FT.	SAMPLE INFORMATION					LITHOLOGY	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)		

0							
2							
4					0.0 (Vac)		
6	S1	60	34	NM	0.0 (S1a)		
8					0.0 (S1b)		
10					0.0 (S1c)		
12							

Vacuum Excavated to 6'.

0-5": Concrete

5-72": WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~60% fine to coarse sand, ~30% gravel up to 1" diameter, ~10% nonplastic silty fines, wet at 60", light brown, FILL.

S1a (0-11"): WIDELY GRADED SAND WITH GRAVEL (SW); ~60% fine to coarse sand, ~35% gravel up to 3/4" diameter, ~5% fines, wet, light brown, FILL.

S1b (11-26"): SILTY SAND (SM); ~70% fine sand, ~20% nonplastic silty fines, ~10% fine gravel, wet, gray, SILTY SAND.

S1c (26-34"): SILT (ML); ~90% nonplastic silty fines, ~10% fine sand, wet, gray, SILT.

Drilled to 12' to set well, but no samples were collected. Bottom of borehole at 12'. No refusal.

ABBREVIATIONS:

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PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)

NM = NOT MEASURED

(ppm) = PARTS PER MILLION

IN. = INCHES

FT. = FEET

Vac. Ex. = VACUUM EXCAVATION

HSA = HOLLOW STEM AUGER

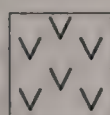
NOTES:

During the first attempt to vacuum excavate a pipe was encountered at 3 feet. The excavation location was moved approximately 2 feet away. Boring vacuum excavated to 6.0 feet, backfilled with cuttings and cold-patched on January 3, 2007. Boring completed with Geoprobe on January 5, 2007. No blow counts are collected during Geoprobe drilling. Monitoring well with soil gas sampling port installed. Environmental samples taken from 2'-4' and 7'-8'.

LITHOLOGY:



ASPHALT/
CONCRETE



FILL



TILL



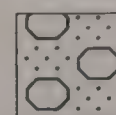
SILTY
SAND



ORGANIC
SOIL



SILT



SAND AND
GRAVEL



BEDROCK

DRILLING METHOD: Vac. Ex./Geoprobe
GROUND SURFACE ELEVATION (FT): 24.7
NORTHING: 2964480.35 EASTING: 767379.7
DRILLED BY: Geosearch S. Law
LOGGED BY: K. Wolfe

LOCATION: In Front of 25 Tufts Street (Sidewalk)
TOTAL DEPTH (FT): 15.25
VERT. DATUM: NAVD 1988
HOR. DATUM: MA State Plane (NAD 83)
DATE START / END: 1/3/2007 - 1/5/2007

DEPTH FT.	SAMPLE INFORMATION					LITHOLOGY	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)		

0							Vacuum Excavated to 6'. 0-5": Concrete 5-72": WIDELY GRADED SAND WITH SILT AND GRAVEL (SW); ~60% fine to coarse sand, ~30% gravel up to 1.5" diameter, ~10% nonplastic silty fines, dry, light brown, FILL.
2					0.0 (Vac)		
4							
6	S1	60	34	NM	0.2 (S1a)		S1a: WIDELY GRADED SAND WITH GRAVEL (SW); ~65% fine to coarse sand, ~30% gravel up to 3/4" diameter, ~5% nonplastic fines, wet, light brown, SAND AND GRAVEL.
8							
10							
12	S2	51	43	NM	3.2 (S2a)		S2a: Similar to S1a, but 3" lens of white gravel up to 1" diameter at 22", SAND AND GRAVEL.
14							
							Refusal at 15.25'. Bottom of borehole.


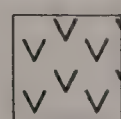


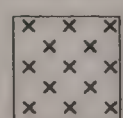
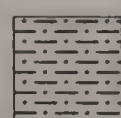

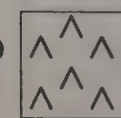
ABBREVIATIONS:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
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HSA = HOLLOW STEM AUGER

NOTES:

Boring vacuum excavated to 6.0 feet, backfilled with cuttings and cold-patched on January 3, 2007. Boring completed with Geoprobe on January 5, 2007. No blow counts are collected during Geoprobe drilling. Monitoring well with soil gas sampling port installed. Environmental samples taken from 2'-4', 7'-9' and 13'-15'.

LITHOLOGY:

	ASPHALT/ CONCRETE		FILL		TILL		SILTY SAND
	ORGANIC SOIL		SILT		SAND AND GRAVEL		BEDROCK



GEI Consultants, Inc.
400 Unicorn Park
Woburn, MA 01801

PROJECT NAME: 50 Tufts Street

CITY/STATE: Somerville, Massachusetts

GEI PROJECT NUMBER: 045162

BORING LOG

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1 of 1

MW110

DRILLING METHOD: Vac. Ex./Geoprobe

GROUND SURFACE ELEVATION (FT): 16

NORTHING: 2964215.31

EASTING: 767585.7

DRILLED BY: Geosearch S. Law

LOGGED BY: K. Wolfe

LOCATION: Corner of Knowlton and Tufts Street (Sidewalk)

TOTAL DEPTH (FT): 16

VERT. DATUM: NAVD 1988

HOR. DATUM: MA State Plane (NAD 83)

DATE START / END: 1/4/2007 - 1/8/2007

SAMPLE INFORMATION

DEPTH FT.	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)
--------------	--------------------	------------	------------	---------------	--------------

LITHOLOGY

SOIL / BEDROCK DESCRIPTION

0							Vacuum Excavated to 6'. 0-5": Concrete 5-36": WIDELY GRADED SAND WITH GRAVEL (SW); ~70% fine to coarse sand, ~25% gravel up to 1" diameter, ~5% nonplastic silty fines, dry, light brown, FILL. 36-72": SILTY SAND (SM); ~60% fine to coarse sand, ~30% nonplastic silty fines, ~10% fine gravel, wet at 60", light brown, SILTY SAND.
2							
4					0.0 (Vac)		
6	S1	60	60	NM	0.0 (S1a)		S1a: SILT (ML), ~90% nonplastic silty fines, ~10% fine sand, wet, gray, SILT.
8							
10							
12	S2	60	42	NM	0.0 (S2a)		S2a (0-39"): Similar to S1a, SILT.
14					0.0 (S2b)		
16							S2b (39-42"): WIDELY GRADED SAND WITH GRAVEL (SW); ~60% fine to coarse sand, ~30% gravel up to 1/2" diameter, ~10% nonplastic fines, wet, gray, SAND AND GRAVEL.

Bottom of borehole at 16'. No refusal.

ABBREVIATIONS:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED
(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Vac. Ex. = VACUUM EXCAVATION
HSA = HOLLOW STEM AUGER

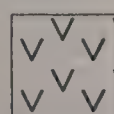
NOTES:

Boring vacuum excavated to 6.0 feet, backfilled with cuttings and cold-patched on January 4, 2007. Boring completed with Geoprobe on January 8, 2007. No blow counts are collected during Geoprobe drilling. Monitoring well with soil gas sampling port installed. Environmental samples taken from 2'-4', 7'-9' and 13'-14'.

LITHOLOGY:



ASPHALT/
CONCRETE



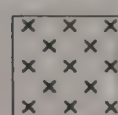
FILL



TILL



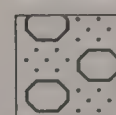
SILTY
SAND



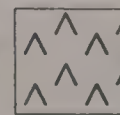
ORGANIC
SOIL



SILT



SAND AND
GRAVEL



BEDROCK



GEI Consultants, Inc.
400 Unicorn Park
Woburn, MA 01801

PROJECT NAME: 50 Tufts Street

CITY/STATE: Somerville, Massachusetts

GEI PROJECT NUMBER: 045162

BORING LOG

PAGE
1 of 1

MW111

DRILLING METHOD: Vac. Ex./Geoprobe

GROUND SURFACE ELEVATION (FT): 19.4

NORTHING: 2964378.68

EASTING: 767694.5

DRILLED BY: Geosearch S. Law

LOGGED BY: K. Wolfe

LOCATION: Corner of Morton and Knowlton Street (Sidewalk)

TOTAL DEPTH (FT): 16

VERT. DATUM: NAVD 1988

HOR. DATUM: MA State Plane (NAD 83)

DATE START / END: 1/4/2007 - 1/8/2007

DEPTH FT.	SAMPLE INFORMATION					LITHOLOGY	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)		

0							
2							
4					0.0 (Vac)		
6	S1	60	45	NM	0.0 (S1a)		
8					0.0 (S1b)		
10					0.0 (S1c)		
12	S2	60	47	NM			
14					0.0 (S2a)		
16							

Vacuum Excavated to 6'.

0-5": Concrete

5-30": WIDELY GRADED SAND WITH GRAVEL (SW); ~75% fine to coarse sand, ~20% gravel up to 1/2" diameter, ~5% nonplastic silty fines, dry, light brown, FILL.

30-72": SILTY SAND (SM); ~70% fine sand, ~20% nonplastic silty fines, ~10% fine gravel, dry, light brown, SILTY SAND.

S1a (0-9"): WIDELY GRADED SAND WITH GRAVEL (SW); ~80% fine to coarse sand, ~15% gravel up to 1/2" diameter, ~5% nonplastic silty fines, wet, light brown, SAND AND GRAVEL.

S1b (9-29"): SILT (ML); ~90% nonplastic silty fines, ~10% fine sand, wet, light brown, SILT.

S1c (29-45"): WIDELY GRADED SAND WITH GRAVEL (SW); ~60% fine to coarse sand, ~35% gravel up to 1" diameter, ~5% nonplastic silty fines, wet, light brown, SAND AND GRAVEL.

S2a: Similar to S1c (29-45"), SAND AND GRAVEL.

Bottom of borehole at 16'. No refusal.

ABBREVIATIONS:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)

NM = NOT MEASURED

(ppm) = PARTS PER MILLION

IN. = INCHES

FT. = FEET

Vac. Ex. = VACUUM EXCAVATION

HSA = HOLLOW STEM AUGER

NOTES:

Boring vacuum excavated to 6.0 feet, backfilled with cuttings and cold-patched on January 4, 2007. Boring completed with Geoprobe on January 8, 2007. No blow counts are collected during Geoprobe drilling. Monitoring well with soil gas sampling port installed. Environmental samples taken from 2'-4', 7'-9' and 13'-15'.

LITHOLOGY:



ASPHALT/
CONCRETE



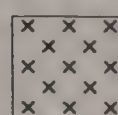
FILL



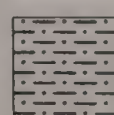
TILL



SILTY
SAND



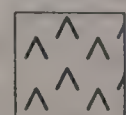
ORGANIC
SOIL



SILT



SAND AND
GRAVEL



BEDROCK



GEI Consultants, Inc.
400 Unicorn Park
Woburn, MA 01801

PROJECT NAME: 50 Tufts Street

CITY/STATE: Somerville, Massachusetts

GEI PROJECT NUMBER: 045162

BORING LOG

PAGE
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MW112

DRILLING METHOD: Vac. Ex./Geoprobe

GROUND SURFACE ELEVATION (FT): 18.6

NORTHING: 2964577.06

EASTING: 767769.8

DRILLED BY: Geosearch S. Law

LOGGED BY: K. Wolfe

LOCATION: In Front of 31 and 35 Knowlton Street (Street)

TOTAL DEPTH (FT): 10

VERT. DATUM: NAVD 1988

HOR. DATUM: MA State Plane (NAD 83)

DATE START / END: 1/4/2007 - 1/8/2007

SAMPLE INFORMATION

DEPTH FT.	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)	LITHOLOGY
0						V
2						V
4					0.0 (Vac)	
6	S1	48	11	NM	0.0 (S1a)	
8						
10						

SOIL / BEDROCK DESCRIPTION

Vacuum Excavated to 6'.

0-7": Asphalt

7-18": WIDELY GRADED SAND WITH GRAVEL (SW); ~75% fine to coarse sand, ~20% gravel up to 3/4" diameter, ~5% nonplastic silty fines, dry, light brown, FILL.

18-72": SILTY SAND (SM); ~70% fine sand, ~25% nonplastic silty fines, ~5% fine gravel, dry, light brown, SILTY SAND.

S1a: SILT WITH SAND AND GRAVEL (ML); ~60% nonplastic silty fines, ~20% fine to coarse sand, ~20% gravel up to 1/2" diameter, wet, light brown, SILT.

Refusal at 10'. Bottom of borehole.

ABBREVIATIONS:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)

NM = NOT MEASURED

(ppm) = PARTS PER MILLION

IN. = INCHES

FT. = FEET

Vac. Ex. = VACUUM EXCAVATION

HSA = HOLLOW STEM AUGER

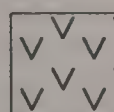
NOTES:

Boring vacuum excavated to 6.0 feet, backfilled with cuttings and cold-patched on January 4, 2007. Boring completed with Geoprobe on January 8, 2007. No blow counts are collected during Geoprobe drilling. Monitoring well with soil gas sampling port installed. Environmental samples taken from 2'-4' and 6'-7'.

LITHOLOGY:



ASPHALT/
CONCRETE



FILL



TILL



SILTY
SAND



ORGANIC
SOIL



SILT



SAND AND
GRAVEL














BEDROCK

DRILLING METHOD: Vac. Ex. and HSA
GROUND SURFACE ELEVATION (FT): 18.1
NORTHING: 2964600.66 EASTING: 767763.8
DRILLED BY: Geosearch R.Dean
LOGGED BY: H.Ballantyne

LOCATION: Across from 35/37 Knowlton
TOTAL DEPTH (FT): 19
VERT. DATUM: NAVD 1988
HOR. DATUM: MA State Plane (NAD 83)
DATE START / END: 3/10/07 - 3/10/07

DEPTH FT.	SAMPLE INFORMATION					LITHOLOGY	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)		

0	S1	36	NA	NM	3.8		S1 (0-12"): ASPHALT
2							S1 (12-36"): SANDY SILT (ML); ~65% silt, ~35% fine to medium sand, <5% fine to coarse angular to sub-rounded gravel (up to 2"-diameter), trace brick fragments, dry to moist, moderately dense, dark gray to black, FILL.
4	S2	12	NA	NM	0.0		S2: Similar to S1 (12-36").
6	S3	12	NA	NM	1.2		S3: SANDY SILT (ML); ~50% fine to medium sand, ~50% silt, trace fine angular to round gravel (up to 1.5"-diameter), dry, moderately dense, possibly stratified, mottled olive and gray, SILT.
8	S4	24	20	4 7 9 9	0.0		S4: SANDY SILT (ML); ~60% non-plastic silt, ~40% fine sand, dry, moderately dense, possibly stratified, mottled olive and gray, SILT.
10	S5	11	11	25 88/5"	1.6 0.6		S5 (0-7"): Similar to S4. S5 (7-11"): WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~75% fine to coarse sand, ~15% silt, ~10% fine to medium angular to subangular gravel (up to 1"-diameter), dry, loose, olive to brown, TILL.
12	S6	24	19	7 17 19 27	0.0		S6: WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~55% fine to coarse sand, ~20% fine to medium angular to sub-rounded gravel (up to 0.75"-diameter), ~15% silt, dry, moderately dense, brown, TILL.
14	S7	24	20	19 17 25 32	0.0		S7: Similar to S6, but wet at 9".
16	S8	24	17	10 22 18 20	1.0		S8: WIDELY GRADED SAND WITH GRAVEL (SW); ~70% fine to coarse sand, ~20% fine to coarse angular to sub-angular gravel (up to 0.25"-diameter), ~10% silt, wet, dense, olive to brown, TILL.
18	S9	24	9	10 12 16 12	0.4		S9: Similar to S8, but 4" gravel lens from 2 to 6".
	S10	24	17	19 25 23 16	2.8		S10: Similar to S8.
Bottom of Borehole at 19 feet, no refusal.							

ABBREVIATIONS:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED
(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Vac. Ex. = VACUUM EXCAVATION
HSA = HOLLOW STEM AUGER

NOTES:

The borehole was vacuum excavated to 6 feet prior to drilling. Upon completion, monitoring well with soil gas sampling port was installed in the boring.

LITHOLOGY:



ASPHALT/
CONCRETE



FILL



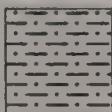
TILL



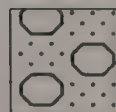
SILTY
SAND



ORGANIC
SOIL



SILT



SAND AND
GRAVEL



BEDROCK



GEI Consultants, Inc.
400 Unicorn Park
Woburn, MA 01801

PROJECT NAME: 50 Tufts Street

CITY/STATE: Somerville, Massachusetts

GEI PROJECT NUMBER: 045162

BORING LOG

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MW113

DRILLING METHOD: Vac. Ex./Geoprobe

GROUND SURFACE ELEVATION (FT): 26.6

NORTHING: 2964723.18

EASTING: 767311.7

DRILLED BY: Geosearch S. Law

LOGGED BY: K. Wolfe & S. Slater

LOCATION: American Legion Parking Lot

TOTAL DEPTH (FT): 21

VERT. DATUM: NAVD 1988

HOR. DATUM: MA State Plane (NAD 83)

DATE START / END: 2/13/07 - 2/15/07

DEPTH FT.	SAMPLE INFORMATION					LITHOLOGY	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)		
0							Vacuum Excavated to 6'. 0-5": Concrete 5-72": WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); ~50% fine to coarse gravel, ~40% fine to coarse sand, ~10% nonplastic silt, light brown, dry, FILL.
2							
4					1.8 (Vac)		
6	S1	60	60	NM	12.6 (S1a)		S1a (0-8"): Similar to Vacuum Excavation 5-72", FILL.
8					1.2 (S1b)		S1b (8-60"): SILT (ML); ~95% nonplastic silt, <5% fine sand, 2" lens of fine gravel at 9", light brown, dry, SILT.
10							
12	S2	60	60	NM	0.7 (S2a)		S2a (0-43"): Similar to S1b (8-60") but no gravel lens, wet at 24", SILT.
14					NM (S2b)		S2b (43-60"): GRAVELLY SILT (ML); ~60% silt, ~35% fine to coarse gravel, <5% fine to coarse sand, light brown, wet, TILL.
16	S3	60	34	NM	0.9 (S3)		S3: WIDELY GRADED SAND WITH GRAVEL (SW); ~65% fine to coarse sand, ~30% fine to coarse gravel, <5% nonplastic silt, light brown, wet, TILL.
18							
20							Bottom of borehole at 21', no refusal.

ABBREVIATIONS:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED
(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Vac. Ex. = VACUUM EXCAVATION
HSA = HOLLOW STEM AUGER

NOTES:

Boring vacuum excavated to 6.0 feet, backfilled with cuttings and cold-patched on February 13, 2007. Boring completed with Geoprobe on February 15, 2007. No blow counts are collected during Geoprobe drilling. Monitoring well with soil gas sampling port installed. Environmental samples taken from 2'-4', 11'-13' and 19'-21'.

LITHOLOGY:



ASPHALT/
CONCRETE



FILL



TILL



SILTY
SAND



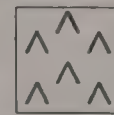
ORGANIC
SOIL



SILT



SAND AND
GRAVEL



BEDROCK

DRILLING METHOD: Vac. Ex./Geoprobe

GROUND SURFACE ELEVATION (FT): 29.8

NORTHING: 2964444.04 EASTING: 767056.2

DRILLED BY: Geosearch S. Law

LOGGED BY: K. Wolfe & S. Slater

LOCATION: In Front of 21 Alston Street

TOTAL DEPTH (FT): 20

VERT. DATUM: NAVD 1988

HOR. DATUM: MA State Plane (NAD 83)

DATE START / END: 2/13/07 - 2/15/07

DEPTH FT.	SAMPLE INFORMATION					LITHOLOGY	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)		
0							Vacuum Excavated to 6'. 0-5": Concrete 5-72": WIDELY GRADED SAND WITH GRAVEL (SW); ~60% fine to coarse sand, ~35% fine to coarse gravel, <5% nonplastic silt, light brown, dry, FILL.
2							
4					3.7 (Vac)		
6	S1	60	60	NM	0.3 (S1)		S1: SILT WITH GRAVEL (ML); ~85% nonplastic silt, ~15% fine gravel, light brown, dry, TILL.
8							
10							
12	S2	60	46	NM	0.0 (S2)		S2: WIDELY GRADED SAND WITH GRAVEL (SW); ~60% fine to coarse sand, ~35% fine to coarse gravel, <5% nonplastic fines, light brown, wet at 24", TILL.
14							
16	S3	48	12	NM	NM (S3a)		S3a (0-1"): Similar to S2a (0-46"), TILL. S3b (1-12"): CRUSHED STONE, gray, BOULDER.
18					0.0 (S3b)		
20							Bottom of borehole at 20', no refusal.

ABBREVIATIONS:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED
(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Vac. Ex. = VACUUM EXCAVATION
HSA = HOLLOW STEM AUGER

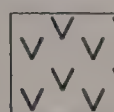
NOTES:

Boring vacuum excavated to 6.0 feet, backfilled with cuttings and cold-patched on February 13, 2007. Boring completed with Geoprobe on February 15, 2007. No blow counts are collected during Geoprobe drilling. Monitoring well with soil gas sampling port installed. Environmental samples taken from 2'-4', 11'-13' and 19'-20'.

LITHOLOGY:



ASPHALT/
CONCRETE



FILL



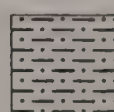
TILL



SILTY
SAND



ORGANIC
SOIL



SILT



SAND AND
GRAVEL



BEDROCK



GEI Consultants, Inc.
400 Unicorn Park
Woburn, MA 01801

PROJECT NAME: 50 Tufts Street

CITY/STATE: Somerville, Massachusetts

GEI PROJECT NUMBER: 045162

BORING LOG

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MW115

DRILLING METHOD: Vac. Ex./Geoprobe

GROUND SURFACE ELEVATION (FT): 27.3

NORTHING: 2964202.14

EASTING: 767233.6

DRILLED BY: GeoSearch S. Law

LOGGED BY: K. Wolfe & S. Slater

LOCATION: In Front of 50 Alston Street

TOTAL DEPTH (FT): 21

VERT. DATUM: NAVD 1988

HOR. DATUM: MA State Plane (NAD 83)

DATE START / END: 2/13/07 - 2/15/07

SAMPLE INFORMATION

DEPTH FT.	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)
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LITHOLOGY

SOIL / BEDROCK DESCRIPTION

0							Vacuum Excavated to 6'. 0-5": Concrete 5-24": BOULDERS. 24-72": SILTY SAND WITH GRAVEL (SM); ~45% fine to coarse sand, ~40% nonplastic silt, ~15% fine to coarse gravel, light brown, dry, FILL.
2							
4					1.9 (Vac)		
6	S1	60	60	NM	3.4 (S1a)		S1a (0-14"): WIDELY GRADED SAND WITH GRAVEL (SW); ~50% fine to coarse sand, ~45% fine to coarse gravel, <5% nonplastic silt, light brown, dry, FILL.
8					0.0 (S1b)		S1b (14-36"): GRAVELLY SILT (ML); ~70% nonplastic silt, ~30% fine gravel, light brown, dry, FILL.
10					1.0 (S1c)		S1c (36-60"): SILT (ML), ~95% nonplstic silt, <5% fine gravel, light brown, dry, SILT.
12	S2	60	60	NM	0.7 (S2)		S2: Similar to S1c (36-60"), SILT.
14							
16	S3	60	29	NM	1.2 (S3a)		S3a (0-17"): Similar to S1c (36-60"), SILT.
18					0.9 (S3b)		S3b (17-29"): CRUSHED STONE; gray, dry, BOULDERS.
20							Refusal at 21feet. Bottom of borehole.

ABBREVIATIONS:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED
(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Vac. Ex. = VACUUM EXCAVATION
HSA = HOLLOW STEM AUGER

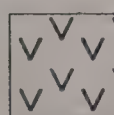
NOTES:

Boring vacuum excavated to 6.0 feet, backfilled with cuttings and cold-patched on February 13, 2007. Boring drilled with Geoprobe on February 15, 2007. No blow counts are collected during Geoprobe drilling. Because of Geoprobe refusal at 21', the well not set deep enough to reach groundwater. It was replaced with a deeper well on February 21, 2007 using hollow-stem augers. Monitoring well with soil gas sampling port installed. Environmental samples taken from 2'-4', and 18'-20'.

LITHOLOGY:



ASPHALT/
CONCRETE



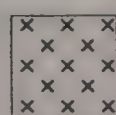
FILL



TILL



SILTY
SAND



ORGANIC
SOIL



SILT



SAND AND
GRAVEL





BEDROCK

DRILLING METHOD: Hollow-Stem Auger
GROUND SURFACE ELEVATION (FT): 27.3
NORTHING: 2964202.14 EASTING: 767233.6
DRILLED BY: GeoSearch Mike and Artey
LOGGED BY: K. Wolfe & S. Slater

LOCATION: In Front of 50 Alston Street
TOTAL DEPTH (FT): 25
VERT. DATUM: NAVD 1988
HOR. DATUM: MA State Plane (NAD 83)
DATE START / END: 2/21/07 - 2/21/07

DEPTH FT.	SAMPLE INFORMATION					LITHOLOGY	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)		

0						
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						
22	S1	24	0	NM	NM	
24	S2	24	0	NM	NM	

0-21': Monitoring well dry. Well removed by hydraulic winch. Augered to 21'. For stratigraphy refer to boring log MW115 from 2/13/07.









21-23': Difficult drilling- augered 24" but no split spoon recovery.

23-25': Difficult drilling- augered 24" but no split spoon recovery.

ABBREVIATIONS:
PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED
(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Vac. Ex. = VACUUM EXCAVATION
HSA = HOLLOW STEM AUGER

NOTES:
Because of Geoprobe refusal at 21' on Febuary 15, 2007, the well was not adequately screened below the water table. The monitoring well was over-excavated with Hollow-Stem Auger and a new monitoring well was installed on February 21, 2007. Environmental samples collected from 19-20'.

LITHOLOGY:

	ASPHALT/ CONCRETE		FILL		TILL		SILTY SAND
	ORGANIC SOIL		SILT		SAND AND GRAVEL		BEDROCK

<div><div>GEI</div><div><div><div></div><div></div><div></div></div><div>Consultants</div></div><div>GEI Consultants, Inc. 400 Unicorn Park Woburn, MA 01801</div></div>		PROJECT NAME: 50 Tufts Street		BORING LOG																																																																										
		CITY/STATE: Somerville, Massachusetts		PAGE 1 of 1	MW116																																																																									
GEI PROJECT NUMBER: 045162																																																																														
DRILLING METHOD: Vac Ex., HSA, Air-rotary			LOCATION: Location																																																																											
GROUND SURFACE ELEVATION (FT): 13.6			TOTAL DEPTH (FT): 16																																																																											
NORTHING: 2964556.29 EASTING: 767934.7			VERT. DATUM: NAVD 1988																																																																											
DRILLED BY: Geosearch R. Dean			HOR. DATUM: MA State Plane (NAD 83)																																																																											
LOGGED BY: H.Ballantyne			DATE START / END: 3/10/07 - 13.6																																																																											
<table><tr><td colspan="6">SAMPLE INFORMATION</td><td rowspan="2">LITHOLOGY</td><td rowspan="2">SOIL / BEDROCK DESCRIPTION</td></tr><tr><td>DEPTH FT.</td><td>TYPE and NO.</td><td>PEN IN.</td><td>REC IN.</td><td>Blow Count</td><td>PID (ppm)</td></tr></table>							SAMPLE INFORMATION						LITHOLOGY	SOIL / BEDROCK DESCRIPTION	DEPTH FT.	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)																																																										
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DEPTH FT.	TYPE and NO.	PEN IN.	REC IN.	Blow Count	PID (ppm)																																																																									
<table><tr><td>0</td><td>S1</td><td>42</td><td>NA</td><td>NM</td><td>0.0</td><td></td><td>S1 (0-8"): ASPHALT</td></tr><tr><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td>S1 (8-42"): SILTY SAND WITH GRAVEL (SM); ~40% fine to medium sand, ~30% fine to coarse angular to sub-angular gravel (up to 3"-diameter), ~20% silt, ~10% coarse sand, boulders and cobbles throughout, dry, dense, olive to brown, TILL.</td></tr><tr><td>4</td><td>S2</td><td>12.5</td><td>NA</td><td>NM</td><td>NM</td><td></td><td>S2: BEDROCK; Gray, slaty cleavage, wet, dense, CAMBRIDGE ARGILLITE.</td></tr><tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>12</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>14</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>16</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>							0	S1	42	NA	NM	0.0		S1 (0-8"): ASPHALT	2							S1 (8-42"): SILTY SAND WITH GRAVEL (SM); ~40% fine to medium sand, ~30% fine to coarse angular to sub-angular gravel (up to 3"-diameter), ~20% silt, ~10% coarse sand, boulders and cobbles throughout, dry, dense, olive to brown, TILL.	4	S2	12.5	NA	NM	NM		S2: BEDROCK; Gray, slaty cleavage, wet, dense, CAMBRIDGE ARGILLITE.	6								8								10								12								14								16							
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GROUNDWATER OBSERVATION WELL REPORT			MW106	
Project 50 Tufts Street			PG. 1 OF 1	
Location Somerville, MA			Boring No. B106	
Client UniFirst Corporation			Location Corner of Dell and Tufts St.	
Contractor GeoSearch		Driller S. Law and B. Law	Project No. 045162	
Inspected by Krista Wolfe		Date Started 1/5/07		
Checked by		Date Completed 1/5/07		

SURVEY DATUM NAVD 1988		LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)		Flush-Mount
GROUND ELEVATION 26.9'		LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)		---
GENERAL SOIL CONDITIONS (Not to Scale)		THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (FT)		3.0
		TYPE OF SURFACE SEAL (indicate any additional seals)		Grout
		ID OF SURFACE CASING (IN)		8.0
		TYPE OF SURFACE CASING		Steel Roadbox
		DEPTH BOTTOM OF CASING (IN)		10.0
		ID and OD OF RISER PIPE (IN)		2 ID / 2.25 OD
		TYPE OF RISER PIPE		Sch. 40 PVC
		DIAMETER OF BOREHOLE (IN)		6 (0-6') / 4.25 (6-19')
		TYPE OF BACKFILL AROUND RISER PIPE		No. 2 Sand, Bentonite, Grout
		DEPTH TOP OF SEAL, IF ANY (FT)		3.0
		TYPE OF SEAL		Granular Bentonite
		DEPTH BOTTOM OF SEAL (FT)		7.0
		DEPTH TOP OF PERVIOUS SECTION		9.0
		TYPE OF PERVIOUS SECTION		Sch. 40 PVC
		DESCRIBE OPENINGS		0.010"
ID and OD OF PERVIOUS SECTION (IN)		2 ID / 2.25 OD		
TYPE OF BACKFILL AROUND PERVIOUS SECTION		No. 2 Sand		
DEPTH BOTTOM OF PERVIOUS SECTION (FT)		19.0		
DEPTH BOTTOM OF SAND COLUMN (FT)		19.0		
ELEV./DEPTH TOP OF SEAL, IF ANY (FT)		19.0		
TYPE OF SEAL		Collapse, Bentonite		
ELEV./DEPTH BOTTOM OF SEAL (FT)		21.0		
TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY		Collapse, Bentonite		

NOTES: Soil vapor sampling port installed.

GROUNDWATER OBSERVATION WELL REPORT			MW107	
Project 50 Tufts Street			PG. 1 OF 1	
Location Somerville, MA			Boring No. B107	
Client UniFirst Corporation			Location In front of 14 Dell St.	
Contractor GeoSearch		Driller S. Law and B. Law	Project No. 045162	
Inspected by Krista Wolfe		Date Started 1/5/07		
Checked by		Date Completed 1/5/07		

GENERAL SOIL CONDITIONS (Not to Scale)	SURVEY DATUM NAVD 1988		LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)	Flush-Mount
	GROUND ELEVATION 15.1'		LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)	---
	FILL	7'	THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)	8.0
			TYPE OF SURFACE SEAL (indicate any additional seals)	Grout (0-8"), Sand (8"-1')
	SILT	19'	ID OF SURFACE CASING (IN)	8.0
			TYPE OF SURFACE CASING	Steel Roadbox
			DEPTH BOTTOM OF CASING (IN)	10.0
			ID and OD OF RISER PIPE (IN)	2 ID / 2.25 OD
			TYPE OF RISER PIPE	Sch. 40 PVC
			DIAMETER OF BOREHOLE (IN)	6 (0-6") / 4.25 (6-21')
			TYPE OF BACKFILL AROUND RISER PIPE	No. 2 Sand, Bentonite, Grout
			DEPTH TOP OF SEAL, IF ANY (FT)	1.0
			TYPE OF SEAL	Granular Bentonite
			DEPTH BOTTOM OF SEAL (FT)	1.3
	TILL	21'	DEPTH TOP OF PERVIOUS SECTION	2.0
			TYPE OF PERVIOUS SECTION	Sch. 40 PVC
			DESCRIBE OPENINGS	0.010"
			ID and OD OF PERVIOUS SECTION (IN)	2 ID / 2.25 OD
			TYPE OF BACKFILL AROUND PERVIOUS SECTION	No. 2 Sand
			DEPTH BOTTOM OF PERVIOUS SECTION (FT)	12.0
DEPTH BOTTOM OF SAND COLUMN (FT)			12.0	
ELEV./DEPTH TOP OF SEAL, IF ANY (FT)			12.0	
TYPE OF SEAL	Collapse, Bentonite			
ELEV./DEPTH BOTTOM OF SEAL (FT)	21.0			
		TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY	Collapse, Bentonite	

NOTES: Soil vapor sampling port installed.

GROUNDWATER OBSERVATION WELL REPORT				MW108	
Project 50 Tufts Street				PG. 1 OF 1	
Location Somerville, MA				Boring No. B108	
Client UniFirst Corporation				Location Corner of Dell and Glen St.	
Contractor GeoSearch		Driller S. Law and B. Law		Project No. 045162	
Inspected by Krista Wolfe		Date Started 1/5/07			
Checked by		Date Completed 1/5/07			

SURVEY DATUM NAVD 1988		LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)		Flush-Mount	
GROUND ELEVATION 13.1'		LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)		---	
GENERAL SOIL CONDITIONS (Not to Scale)		THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)		8.0	
		TYPE OF SURFACE SEAL (indicate any additional seals)		Grout (0-8"), Sand (8"-1")	
		ID OF SURFACE CASING (IN)		8.0	
		TYPE OF SURFACE CASING		Steel Roadbox	
		DEPTH BOTTOM OF CASING (IN)		10.0	
		ID and OD OF RISER PIPE (IN)		2 ID / 2.25 OD	
		TYPE OF RISER PIPE		Sch. 40 PVC	
		DIAMETER OF BOREHOLE (IN)		6 (0-6') / 4.25 (6-12')	
		TYPE OF BACKFILL AROUND RISER PIPE		No. 2 Sand, Bentonite, Grout	
		DEPTH TOP OF SEAL, IF ANY (FT)		1.0	
		TYPE OF SEAL		Granular Bentonite	
		DEPTH BOTTOM OF SEAL (FT)		1.5	
		DEPTH TOP OF PERVIOUS SECTION		2.0	
		TYPE OF PERVIOUS SECTION		Sch. 40 PVC	
		DESCRIBE OPENINGS		0.010"	
ID and OD OF PERVIOUS SECTION (IN)		2 ID / 2.25 OD			
TYPE OF BACKFILL AROUND PERVIOUS SECTION		No. 2 Sand			
DEPTH BOTTOM OF PERVIOUS SECTION (FT)		12.0			
DEPTH BOTTOM OF SAND COLUMN (FT)		12.0			
ELEV./DEPTH TOP OF SEAL, IF ANY (FT)		NA			
TYPE OF SEAL		NA			
ELEV./DEPTH BOTTOM OF SEAL (FT)		NA			
TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY		NA			

NOTES: Soil vapor sampling port installed.

GROUNDWATER OBSERVATION WELL REPORT				MW109	
Project 50 Tufts Street				PG. 1 OF 1	
Location Somerville, MA				Boring No. B109	
Client UniFirst Corporation				Location In front of 25	
Contractor GeoSearch		Driller S. Law and B. Law		Tufts St.	
Inspected by Krista Wolfe		Date Started 1/5/07		Project No. 045162	
Checked by		Date Completed 1/5/07			

GENERAL SOIL CONDITIONS (Not to Scale)	SURVEY DATUM	NAVD 1988	LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)	Flush-Mount
	GROUND ELEVATION	24.7'	LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)	---
		FILL	THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)	8.0
	TYPE OF SURFACE SEAL (indicate any additional seals)		Grout (0-8"), Sand (8"-1.5')	
	ID OF SURFACE CASING (IN)		8.0	
	TYPE OF SURFACE CASING		Steel Roadbox	
	SAND AND GRAVEL	DEPTH BOTTOM OF CASING (IN)	10.0	
		ID and OD OF RISER PIPE (IN)	2 ID / 2.25 OD	
		TYPE OF RISER PIPE	Sch. 40 PVC	
		DIAMETER OF BOREHOLE (IN)	6 (0-6') / 4.25 (6-13')	
		TYPE OF BACKFILL AROUND RISER PIPE	No. 2 Sand	
		DEPTH TOP OF SEAL, IF ANY (FT)	1.5	
		TYPE OF SEAL	Granular Bentonite	
		DEPTH BOTTOM OF SEAL (FT)	2.5	
		DEPTH TOP OF PERVIOUS SECTION	3.0	
		TYPE OF PERVIOUS SECTION	Sch. 40 PVC	
		DESCRIBE OPENINGS	0.010"	
		ID and OD OF PERVIOUS SECTION (IN)	2 ID / 2.25 OD	
TYPE OF BACKFILL AROUND PERVIOUS SECTION	No. 2 Sand			
DEPTH BOTTOM OF PERVIOUS SECTION (FT)	13.0			
DEPTH BOTTOM OF SAND COLUMN (FT)	13.0			
ELEV./DEPTH TOP OF SEAL, IF ANY (FT)	13.0			
TYPE OF SEAL	Collapse, Grout			
ELEV./DEPTH BOTTOM OF SEAL (FT)	15.25			
TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY	Collapse, Grout			

NOTES: Soil vapor sampling port installed.

GROUNDWATER OBSERVATION WELL REPORT				MW110	
Project 50 Tufts Street				PG. 1 OF 1	
Location Somerville, MA				Boring No. B110	
Client UniFirst Corporation				Location Corner of Tufts and Knowlton St.	
Contractor GeoSearch		Driller S. Law and B. Law		Project No. 045162	
Inspected by Krista Wolfe		Date Started 1/8/07			
Checked by		Date Completed 1/8/07			

GENERAL SOIL CONDITIONS (Not to Scale)	SURVEY DATUM	NAVD 1988	LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)	Flush-Mount
	GROUND ELEVATION	16'	LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)	---
	FILL	3'	THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)	8.0
			TYPE OF SURFACE SEAL (indicate any additional seals)	Grout (0-8"), Sand (8"-1.5')
	SILTY SAND	6'	ID OF SURFACE CASING (IN)	8.0
			TYPE OF SURFACE CASING	Steel Roadbox
	SILT	14'	DEPTH BOTTOM OF CASING (IN)	10.0
			ID and OD OF RISER PIPE (IN)	2 ID / 2.25 OD
			TYPE OF RISER PIPE	Sch. 40 PVC
			DIAMETER OF BOREHOLE (IN)	6 (0-6') / 4.25 (6-13')
			TYPE OF BACKFILL AROUND RISER PIPE	No. 2 Sand
			DEPTH TOP OF SEAL, IF ANY (FT)	1.5
			TYPE OF SEAL	Granular Bentonite
			DEPTH BOTTOM OF SEAL (FT)	2.5
			DEPTH TOP OF PERVIOUS SECTION	3.0
			TYPE OF PERVIOUS SECTION	Sch. 40 PVC
			DESCRIBE OPENINGS	0.010"
			ID and OD OF PERVIOUS SECTION (IN)	2 ID / 2.25 OD
TYPE OF BACKFILL AROUND PERVIOUS SECTION	No. 2 Sand			
DEPTH BOTTOM OF PERVIOUS SECTION (FT)	13.0			
DEPTH BOTTOM OF SAND COLUMN (FT)	13.0			
ELEV./DEPTH TOP OF SEAL, IF ANY (FT)	13.0			
TYPE OF SEAL	Collapse, Grout			
ELEV./DEPTH BOTTOM OF SEAL (FT)	16.0			
SAND AND GRAVEL	16'	TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY	Collapse, Grout	

GROUNDWATER OBSERVATION WELL REPORT			MW111	
Project 50 Tufts Street			PG. 1 OF 1	
Location Somerville, MA			Boring No. B111	
Client UniFirst Corporation			Location Corner of Morton	
Contractor GeoSearch		Driller S. Law and B. Law	and Knowlton St.	
Inspected by Krista Wolfe		Date Started 1/8/07	Project No. 045162	
Checked by		Date Completed 1/8/07		

GENERAL SOIL CONDITIONS (Not to Scale)	SURVEY DATUM	NAVD 1988	LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)	Flush-Mount
	GROUND ELEVATION	19.4'	LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)	---
	FILL	2.5'	THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)	8.0
			TYPE OF SURFACE SEAL (indicate any additional seals)	Grout (0-8"), Sand (8"-1.5')
			ID OF SURFACE CASING (IN)	8.0
			TYPE OF SURFACE CASING	Steel Roadbox
	SILTY SAND	6'	DEPTH BOTTOM OF CASING (IN)	10.0
	SAND AND GRAVEL	7'	ID and OD OF RISER PIPE (IN)	2 ID / 2.25 OD
	SILT	8.5'	TYPE OF RISER PIPE	Sch. 40 PVC
			DIAMETER OF BOREHOLE (IN)	6 (0-6") / 4.25 (6-14')
			TYPE OF BACKFILL AROUND RISER PIPE	No. 2 Sand
	SAND AND GRAVEL	16'	DEPTH TOP OF SEAL, IF ANY (FT)	1.5
			TYPE OF SEAL	Granular Bentonite
			DEPTH BOTTOM OF SEAL (FT)	3.0
			DEPTH TOP OF PERVIOUS SECTION	4.0
TYPE OF PERVIOUS SECTION			Sch. 40 PVC	
DESCRIBE OPENINGS			0.010"	
ID and OD OF PERVIOUS SECTION (IN)			2 ID / 2.25 OD	
TYPE OF BACKFILL AROUND PERVIOUS SECTION			No. 2 Sand	
DEPTH BOTTOM OF PERVIOUS SECTION (FT)			14.0	
DEPTH BOTTOM OF SAND COLUMN (FT)			14.0	
		ELEV./DEPTH TOP OF SEAL, IF ANY (FT)	14.0	
		TYPE OF SEAL	Collapse, Grout	
		ELEV./DEPTH BOTTOM OF SEAL (FT)	16.0	
		TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY	Collapse, Grout	

NOTES: Soil vapor sampling port installed.

GROUNDWATER OBSERVATION WELL REPORT			MW112	
Project 50 Tufts Street			PG. 1 OF 1	
Location Somerville, MA			Boring No. B112	
Client UniFirst Corporation			Location In front of 31 and 33 Knowlton St.	
Contractor GeoSearch		Driller S. Law and B. Law	Project No. 045162	
Inspected by Krista Wolfe		Date Started 1/8/07		
Checked by		Date Completed 1/8/07		

GENERAL SOIL CONDITIONS (Not to Scale)	SURVEY DATUM	NAVD 1988	LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)	Flush-Mount
	GROUND ELEVATION	18.6'	LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)	---
		FILL	1.5'	THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)
	SILTY SAND		TYPE OF SURFACE SEAL (indicate any additional seals)	Grout (0-8"), Sand (8"-1.5')
			ID OF SURFACE CASING (IN)	6.0
			TYPE OF SURFACE CASING	Steel Roadbox
			DEPTH BOTTOM OF CASING (IN)	8.0
			ID and OD OF RISER PIPE (IN)	2 ID / 2.25 OD
			TYPE OF RISER PIPE	Sch. 40 PVC
			DIAMETER OF BOREHOLE (IN)	6 (0-6') / 4.25 (6-10')
			TYPE OF BACKFILL AROUND RISER PIPE	No. 2 Sand
			DEPTH TOP OF SEAL, IF ANY (FT)	1.5
			TYPE OF SEAL	Granular Bentonite
			DEPTH BOTTOM OF SEAL (FT)	2.5
			DEPTH TOP OF PERVIOUS SECTION	3.0
		TYPE OF PERVIOUS SECTION	Sch. 40 PVC	
	DESCRIBE OPENINGS	0.010"		
	ID and OD OF PERVIOUS SECTION (IN)	2 ID / 2.25 OD		
	TYPE OF BACKFILL AROUND PERVIOUS SECTION	No. 2 Sand		
	DEPTH BOTTOM OF PERVIOUS SECTION (FT)	10.0		
	DEPTH BOTTOM OF SAND COLUMN (FT)	10.0		
	ELEV./DEPTH TOP OF SEAL, IF ANY (FT)	NA		
	TYPE OF SEAL	NA		
	ELEV./DEPTH BOTTOM OF SEAL (FT)	NA		
	TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY	NA		
	SILT	10'		

NOTES: Soil vapor sampling port installed.

GROUNDWATER OBSERVATION WELL REPORT				MW112A	
Project 50 Tufts Street				PG. 1 OF 1	
Location Somerville, MA				Boring No. B112A	
Client UniFirst Corporation				Location across from 35/37	
Contractor GeoSearch		Driller Rodney Dean		Knowlton Street	
Inspected by Heather Ballantyne		Date Started 3/10/07		Project No. 045162	
Checked by		Date Completed 3/10/07			

SURVEY DATUM NAVD 1988		LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)		Flush-Mount	
GROUND ELEVATION 18.1'		LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)		---	
GENERAL SOIL CONDITIONS (Not to Scale)		THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)		8.0	
		TYPE OF SURFACE SEAL (indicate any additional seals)		Cement	
		ID OF SURFACE CASING (IN)		8.0	
		TYPE OF SURFACE CASING		Steel Roadbox	
		DEPTH BOTTOM OF CASING (IN)		10.0	
		ID and OD OF RISER PIPE (IN)		2 ID / 2.25 OD	
		TYPE OF RISER PIPE		Sch. 40 PVC	
		DIAMETER OF BOREHOLE (IN)		6 (0-3')/ 4.5 (3-19')	
		TYPE OF BACKFILL AROUND RISER PIPE		No. 1 Sand/Bentonite Chips	
		DEPTH TOP OF SEAL, IF ANY (FT)		1.0	
		TYPE OF SEAL		Bentonite Chips	
		DEPTH BOTTOM OF SEAL (FT)		3.0	
		DEPTH TOP OF PERVIOUS SECTION		4.0	
		TYPE OF PERVIOUS SECTION		Sch. 40 PVC	
		DESCRIBE OPENINGS		0.010"	
ID and OD OF PERVIOUS SECTION (IN)		2 ID / 2.25 OD			
TYPE OF BACKFILL AROUND PERVIOUS SECTION		No. 1 Sand			
DEPTH BOTTOM OF PERVIOUS SECTION (FT)		19.0			
DEPTH BOTTOM OF SAND COLUMN (FT)		19.0			
ELEV./DEPTH TOP OF SEAL, IF ANY (FT)		---			
TYPE OF SEAL		---			
ELEV./DEPTH BOTTOM OF SEAL (FT)		---			
TYPE OF BACKFILL BELOW PERVIOUS SECTION,		none			

NOTES: Soil vapor sampling port installed.

GROUNDWATER OBSERVATION WELL REPORT				MW113	
Project 50 Tufts Street				PG. 1 OF 1	
Location Somerville, MA				Boring No. B113	
Client UniFirst Corporation				Location American Legion	
Contractor GeoSearch		Driller S. Law		Parking Lot	
Inspected by Krista Wolfe		Date Started 2/15/07		Project No. 045162	
Checked by		Date Completed 2/15/07			

GENERAL SOIL CONDITIONS (Not to Scale)	SURVEY DATUM	NAVD 1988	LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)	Flush-Mount
	GROUND ELEVATION	26.6'	LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)	---
			THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)	8.0
	FILL	7'	TYPE OF SURFACE SEAL (indicate any additional seals)	Grout
			ID OF SURFACE CASING (IN)	8.0
	SILT	15'	TYPE OF SURFACE CASING	Steel Roadbox
			DEPTH BOTTOM OF CASING (IN)	10.0
			ID and OD OF RISER PIPE (IN)	2 ID / 2.25 OD
			TYPE OF RISER PIPE	Sch. 40 PVC
			DIAMETER OF BOREHOLE (IN)	6 (0-6') / 4.25 (6-21')
			TYPE OF BACKFILL AROUND RISER PIPE	No. 2 Sand
			DEPTH TOP OF SEAL, IF ANY (FT)	6.0
			TYPE OF SEAL	Granular Bentonite
			DEPTH BOTTOM OF SEAL (FT)	8.0
			DEPTH TOP OF PERVIOUS SECTION	10.0
TYPE OF PERVIOUS SECTION	Sch. 40 PVC			
DESCRIBE OPENINGS	0.010"			
ID and OD OF PERVIOUS SECTION (IN)	2 ID / 2.25 OD			
TYPE OF BACKFILL AROUND PERVIOUS SECTION	No. 2 Sand			
DEPTH BOTTOM OF PERVIOUS SECTION (FT)	20.0			
TILL	21'	DEPTH BOTTOM OF SAND COLUMN (FT)	20.0	
		ELEV./DEPTH TOP OF SEAL, IF ANY (FT)	NA	
		TYPE OF SEAL	NA	
		ELEV./DEPTH BOTTOM OF SEAL (FT)	NA	
		TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY	Collapse	

GROUNDWATER OBSERVATION WELL REPORT			MW114	
Project 50 Tufts Street			PG. 1 OF 1	
Location Somerville, MA			Boring No. B114	
Client UniFirst Corporation			Location In front of 21	
Contractor GeoSearch		Driller S. Law	Alston Street	
Inspected by Krista Wolfe		Date Started 2/15/07	Project No. 045162	
Checked by		Date Completed 2/15/07		

GENERAL SOIL CONDITIONS (Not to Scale)	SURVEY DATUM NAVD 1988		LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)	Flush-Mount
	GROUND ELEVATION 29.8'		LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)	---
	FILL	6'	THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)	8.0
			TYPE OF SURFACE SEAL (indicate any additional seals)	Grout
	TILL	16'	ID OF SURFACE CASING (IN)	8.0
			TYPE OF SURFACE CASING	Steel Roadbox
			DEPTH BOTTOM OF CASING (IN)	10.0
			ID and OD OF RISER PIPE (IN)	2 ID / 2.25 OD
			TYPE OF RISER PIPE	Sch. 40 PVC
			DIAMETER OF BOREHOLE (IN)	6 (0-6') / 3 (6-20')
			TYPE OF BACKFILL AROUND RISER PIPE	No. 2 Sand
			DEPTH TOP OF SEAL, IF ANY (FT)	3.0
			TYPE OF SEAL	Granular Bentonite
			DEPTH BOTTOM OF SEAL (FT)	5.0
			DEPTH TOP OF PERVIOUS SECTION	7.0
			TYPE OF PERVIOUS SECTION	Sch. 40 PVC
			DESCRIBE OPENINGS	0.010"
			ID and OD OF PERVIOUS SECTION (IN)	2 ID / 2.25 OD
	TYPE OF BACKFILL AROUND PERVIOUS SECTION	No. 2 Sand		
	DEPTH BOTTOM OF PERVIOUS SECTION (FT)	17.0		
DEPTH BOTTOM OF SAND COLUMN (FT)	17.0			
ELEV./DEPTH TOP OF SEAL, IF ANY (FT)	NA			
TYPE OF SEAL	NA			
ELEV./DEPTH BOTTOM OF SEAL (FT)	NA			
BOULDERS	20'	TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY	Collapse	

NOTES: Soil vapor sampling port installed.

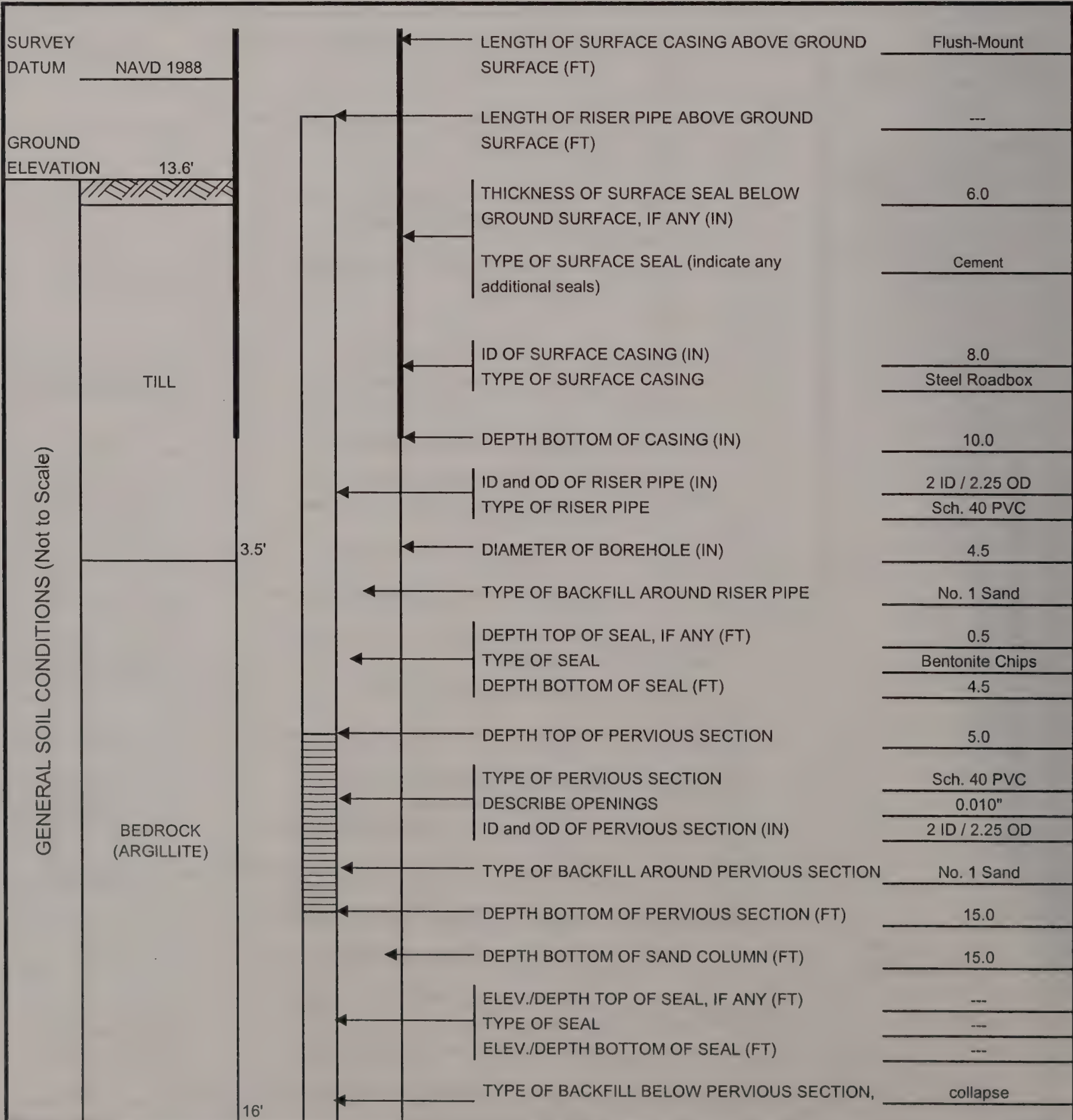
GROUNDWATER OBSERVATION WELL REPORT				MW115	
Project 50 Tufts Street				PG. 1 OF 1	
Location Somerville, MA				Boring No. B115	
Client UniFirst Corporation				Location In front of 50	
Contractor GeoSearch		Driller Steve Law		Alston Street	
Inspected by Krista Wolfe & Samantha Slater		Date Started 2/13/07		Project No. 045162	
Checked by		Date Completed 2/15/07			

GENERAL SOIL CONDITIONS (Not to Scale)	SURVEY DATUM	NAVD 1988	LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)	Flush-Mount
	GROUND ELEVATION	27.3'	LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)	
			THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)	8.0
	FILL	TYPE OF SURFACE SEAL (indicate any additional seals)	Grout	
		ID OF SURFACE CASING (IN)	8.0	
		TYPE OF SURFACE CASING	Steel Roadbox	
		DEPTH BOTTOM OF CASING (IN)	10.0	
		ID and OD OF RISER PIPE (IN)	2 ID / 2.25 OD	
		TYPE OF RISER PIPE	Sch. 40 PVC	
		DIAMETER OF BOREHOLE (IN)	6 (0-6') / 4.5 (6-25')	
		TYPE OF BACKFILL AROUND RISER PIPE	No. 2 Sand	
		DEPTH TOP OF SEAL, IF ANY (FT)	5.0	
		TYPE OF SEAL	Granular Bentonite	
		DEPTH BOTTOM OF SEAL (FT)	6.0	
		DEPTH TOP OF PERVIOUS SECTION	7.0	
		TYPE OF PERVIOUS SECTION	Sch. 40 PVC	
		DESCRIBE OPENINGS	0.010"	
		ID and OD OF PERVIOUS SECTION (IN)	2 ID / 2.25 OD	
TYPE OF BACKFILL AROUND PERVIOUS SECTION		No. 2 Sand		
DEPTH BOTTOM OF PERVIOUS SECTION (FT)	17.0			
DEPTH BOTTOM OF SAND COLUMN (FT)	17.0			
ELEV./DEPTH TOP OF SEAL, IF ANY (FT)	NA			
TYPE OF SEAL	NA			
ELEV./DEPTH BOTTOM OF SEAL (FT)	NA			
TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY	None			
NOTES: Soil Vapor Sampling Port Installed		GEI Consultants		

GROUNDWATER OBSERVATION WELL REPORT			MW115R	
Project 50 Tufts Street			PG. 1 OF 1	
Location Somerville, MA			Boring No. B115R	
Client UniFirst Corporation			Location In front of 50	
Contractor GeoSearch		Driller Mike & Artey	Alston Street	
Inspected by Krista Wolfe		Date Started 2/21/07	Project No. 045162	
Checked by		Date Completed 2/21/07		

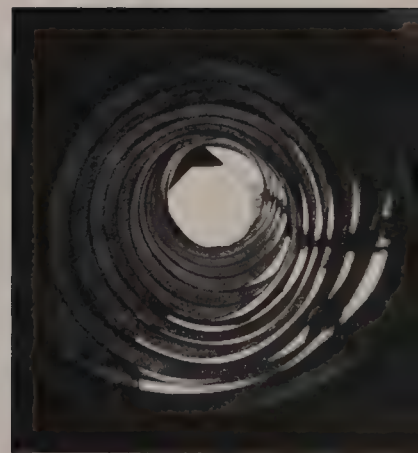
GENERAL SOIL CONDITIONS (Not to Scale)	SURVEY DATUM	NAVD 1988	LENGTH OF SURFACE CASING ABOVE GROUND SURFACE (FT)	Flush-Mount	
	GROUND ELEVATION	27.3'	LENGTH OF RISER PIPE ABOVE GROUND SURFACE (FT)	---	
			THICKNESS OF SURFACE SEAL BELOW GROUND SURFACE, IF ANY (IN)	8.0	
	FILL	9'	TYPE OF SURFACE SEAL (indicate any additional seals)	Grout	
			ID OF SURFACE CASING (IN)	8.0	
		TYPE OF SURFACE CASING	Steel Roadbox		
		DEPTH BOTTOM OF CASING (IN)	10.0		
		SILT	17'	ID and OD OF RISER PIPE (IN)	2 ID / 2.25 OD
				TYPE OF RISER PIPE	Sch. 40 PVC
		TILL WITH BOULDERS	25'	DIAMETER OF BOREHOLE (IN)	6 (0-6') / 4.5 (6-25')
				TYPE OF BACKFILL AROUND RISER PIPE	No. 2 Sand
				DEPTH TOP OF SEAL, IF ANY (FT)	6.0
				TYPE OF SEAL	Granular Bentonite
			DEPTH BOTTOM OF SEAL (FT)	8.0	
			DEPTH TOP OF PERVIOUS SECTION	10.0	
		TYPE OF PERVIOUS SECTION	Sch. 40 PVC		
		DESCRIBE OPENINGS	0.010"		
		ID and OD OF PERVIOUS SECTION (IN)	2 ID / 2.25 OD		
		TYPE OF BACKFILL AROUND PERVIOUS SECTION	No. 2 Sand		
		DEPTH BOTTOM OF PERVIOUS SECTION (FT)	25.0		
		DEPTH BOTTOM OF SAND COLUMN (FT)	25.0		
		ELEV./DEPTH TOP OF SEAL, IF ANY (FT)	NA		
		TYPE OF SEAL	NA		
		ELEV./DEPTH BOTTOM OF SEAL (FT)	NA		
		TYPE OF BACKFILL BELOW PERVIOUS SECTION, IF ANY	None		

GROUNDWATER OBSERVATION WELL REPORT				MW116	
Project 50 Tufts Street				PG. 1 OF 1	
Location Somerville, MA				Boring No. B116	
Client UniFirst Corporation				Location South side of	
Contractor GeoSearch		Driller Rodney Dean		Capuano School	
Inspected by Heather Ballantyne		Date Started 3/10/07		Project No. 045162	
Checked by		Date Completed 3/10/07			





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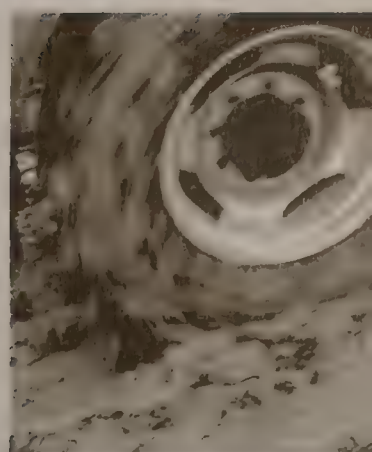
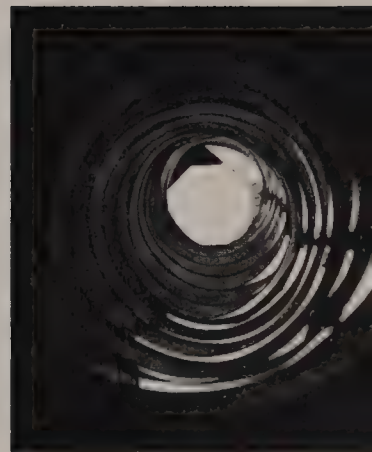
Appendix K

Soil Testing Laboratory Data

(See CD in Appendix C)



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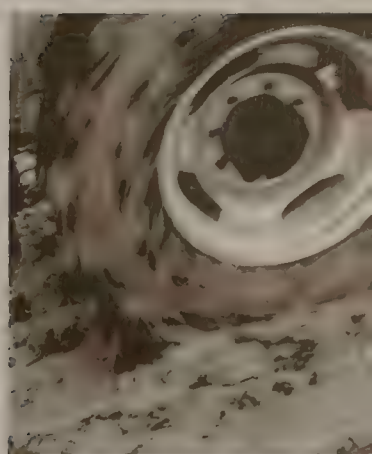
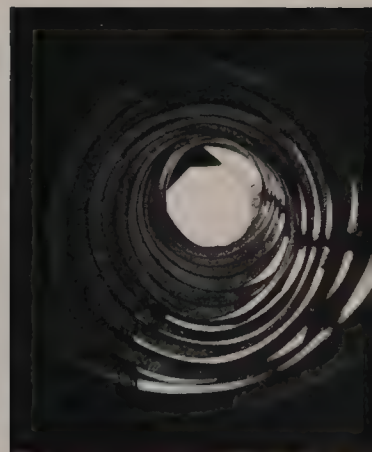
Appendix L

Groundwater Testing Laboratory Data

(See CD in Appendix C)



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Appendix M


Hazardous Waste Manifests

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MP 0798588888	2. Page 1 of 1	3. Emergency Response Phone 603 223 8886	4. Manifest Tracking Number 000481757 FLE		
5. Generator's Name and Mailing Address Unit First 68 Jonsen Road Wilmington MA 01857				Generator's Site Address (if different than mailing address) Land parcel 50 Tule Street Somerville MA 02143			
Generator's Phone: 978 655-8882				U.S. EPA ID Number MAR00002138			
6. Transporter 1 Company Name TMC Services, Inc				U.S. EPA ID Number			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address Northland Environmental, Inc. 275 Adams Avenue Providence RI 02905				U.S. EPA ID Number R1D040098352			
Facility's Phone: 401 781-6340							


9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
		No.	Type					
X	1. Hazardous waste, solid, n.e.s. 9. HA3082, III, (TCE/PCE Water)	1	211	110	G	D039	U210	

14. Special Handling Instructions and Additional Information
THE (1) FROM TMC Job # 1016 NLX3

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
 I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offoror's Printed/Typed Name STEVEN AQUILINO	Signature 	Month 12	Day 15	Year 01
--	---	--------------------	------------------	-------------------

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: _____
 Transporter signature (for exports only): _____ Date leaving U.S.: _____

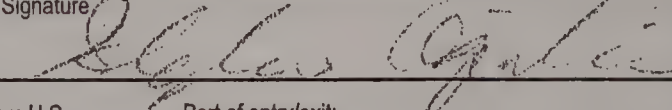
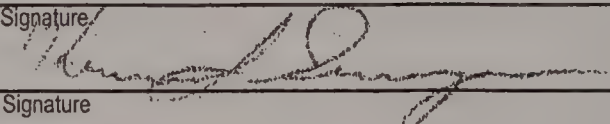
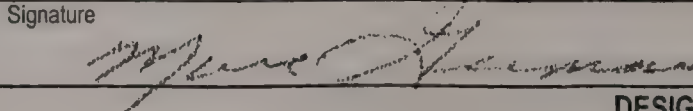
17. Transporter Acknowledgment of Receipt of Materials				
Transporter 1 Printed/Typed Name David Stue	Signature 	Month 	Day 	Year
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

18. Discrepancy
 18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
 Manifest Reference Number: _____

18b. Alternate Facility (or Generator)		U.S. EPA ID Number	
Facility's Phone:			
18c. Signature of Alternate Facility (or Generator)		Month	Day

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)			
1	2	3	4

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
 Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____

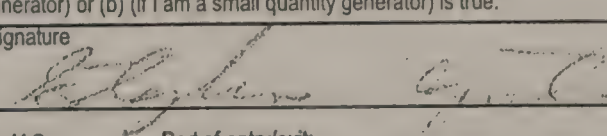
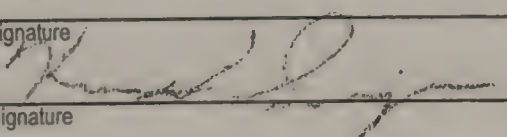

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MP 9780580580		2. Page 1 of 1		3. Emergency Response Phone 508-223-5865		4. Manifest Tracking Number 000481949 FILE			
		5. Generator's Name and Mailing Address One Inc 68 Jonspin Road Wilmington MA 01867 978 558-8080				Generator's Site Address (if different than mailing address) Land parcel 50 Tufts Street Somerville MA 02143					
		6. Transporter 1 Company Name TMC Services, Inc.						U.S. EPA ID Number MA000502138			
		7. Transporter 2 Company Name						U.S. EPA ID Number			
		8. Designated Facility Name and Site Address						U.S. EPA ID Number			
		Facility's Phone:									
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))				10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
						No.	Type				
	X	1. Hazardous waste, solid, n.o.s. 9. NA3077, III (TCE/PCE Sol)				132	DM	500	P	D030	U210
	X	2. Hazardous waste, liquid, n.o.s. 9. NA3082, III (TCE/PCE Groundwater)					DM		B	D030	U210
		3.									
TRANSPORTER		4.									
	14. Special Handling Instructions and Additional Information TMC Job # 1007-001 NDG 07xxx <div style="text-align: right;">Order #: 2502913</div>										
	15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.										
	Generator's/Offoror's Printed/Typed Name Stephen Aquilino					Signature 			Month Day Year 01/04/07		
	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____										
DESIGNATED FACILITY	17. Transporter Acknowledgment of Receipt of Materials										
	Transporter 1 Printed/Typed Name Ferris Somers					Signature 			Month Day Year 01/04/07		
	Transporter 2 Printed/Typed Name					Signature			Month Day Year		
	18. Discrepancy										
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input checked="" type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Delete U210										
18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number											
Facility's Phone: _____											
18c. Signature of Alternate Facility (or Generator) Month Day Year											
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)											
1. H141 2. 3. 4.											
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a											
Printed/Typed Name MARC GORMAN					Signature 			Month Day Year 01/05/07			

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MA 9788588888	2. Page 1 of 1	3. Emergency Response Phone 800-23-8888	4. Manifest Tracking Number 000481947 FLE	
5. Generator's Name and Mailing Address Unifirst 68 Joseph Road Wilmington MA 01837 978 658-8888		Alt: Stephen Aquilino, Property Manager		Generator's Site Address (if different than mailing address) Land parcel 60 Tufts Street Somerville MA 02143		
6. Transporter 1 Company Name TMC Services, Inc.				U.S. EPA ID Number MA R000502138		
7. Transporter 2 Company Name				U.S. EPA ID Number		
8. Designated Facility Name and Site Address				U.S. EPA ID Number		
Facility's Phone:						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. Hazardous waste, solid, n.o.s. 9. NA3077, III (TCE/PCE Soil) 144	001 DM		500	P	D039 U210
X	2. Hazardous waste, liquid, n.o.s. 9. NA3082, III (TCE/PCE Groundwater)	DM			G	D039 U210
	3.					
	4.					
14. Special Handling Instructions and Additional Information TMC JOB # 1007-001 NDG 07xxx Order #: 50309						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Offor's Printed/Typed Name Stephen Aquilino		Signature <i>Stephen Aquilino</i>		Month Day Year 01 05 07		
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:				
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name <i>John J. Murphy</i>		Signature <i>John J. Murphy</i>		Month Day Year 01 05 07		
Transporter 2 Printed/Typed Name		Signature		Month Day Year		
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input checked="" type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Delete U210 Manifest Reference Number:						
18b. Alternate Facility (or Generator)				U.S. EPA ID Number		
Facility's Phone:						
18c. Signature of Alternate Facility (or Generator)				Month Day Year		
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1.		2.		3.		4.
20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name Stephen Aquilino		Signature <i>Stephen Aquilino</i>		Month Day Year 01 05 07		

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MA 1078658888		2. Page 1 of 3		3. Emergency Response Phone		4. Manifest Tracking Number 000481948 FLE		
5. Generator Name and Mailing Address 68 Joseph Road Wilmington MA 01887 978 658-8888		6. Generator Site Address (if different than mailing address) 50 Tufts Street Somerville MA 02143								
6. Transporter 1 Company Name TNO Services, Inc.		U.S. EPA ID Number 00502138								
7. Transporter 2 Company Name		U.S. EPA ID Number								
8. Designated Facility Name and Site Address General Chemical Corp 133 Island Street Roslindale MA 02126 Facility's Phone: 617-251-8922		U.S. EPA ID Number MA00193710-79								
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
					No.	Type				
	X 1	9. MA3077, III (TCE/PCE Soil)				DM		P	D030 U210	
	X 2	9. MA3082, III (TCE/PCE Groundwater)			2416	DM	55	G	D030 U210	
14. Special Handling Instructions and Additional Information INC SOL # 1007-001 NDG 07xxx Order # 50322										
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.										
Generator's/Offoror's Printed/Typed Name Stephen Aquilino		Signature 		Month 01		Day 09		Year 07		
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit:		Date leaving U.S.:					
	Transporter signature (for exports only):									
	17. Transporter Acknowledgment of Receipt of Materials									
TRANSPORTER	Transporter 1 Printed/Typed Name Kenneth Benoit		Signature 		Month 01		Day 09		Year 07	
	Transporter 2 Printed/Typed Name		Signature		Month		Day		Year	
DESIGNATED FACILITY	18. Discrepancy									
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
	Manifest Reference Number:									
	18b. Alternate Facility (or Generator) U.S. EPA ID Number									
	Facility's Phone:									
18c. Signature of Alternate Facility (or Generator) Month Day Year										
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)										
1. 1111		2.		3.		4.				
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a										
Printed/Typed Name MARC G. ...		Signature 		Month 01		Day 09		Year 07		

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number				
		12078658888	1	610 223 8565	000574003 FILE				
5. Generator's Name and Mailing Address		Generator's Site Address (if different than mailing address)							
Unifirst 88 Joseph Road Wilmington MA 01887		Land parcel 60 Tuba Street Somerville MA 02143							
6. Transporter 1 Company Name		555-8888			U.S. EPA ID Number				
TMC Services Inc.					MA0000502138				
7. Transporter 2 Company Name					U.S. EPA ID Number				
8. Designated Facility Name and Site Address					U.S. EPA ID Number				
General Chemical Corp. 133 Leland St. Somerville MA 02143					MA00019371079				
Facility's Phone:									
9a. HM		9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vgl.	13. Waste Codes	
				No. Type					
1.		Hazardous waste, solid, n.o.s.		001		500	P	D030 U210	
X		9, NA3077, III (TCE/PCE Sol)		245					
2.		Hazardous waste, liquid, n.o.s.						D030 U210	
X		9, NA3082, III (TCE/PCE Groundwater)							
3.									
4.									
14. Special Handling Instructions and Additional Information									
TMC Job # 1007-001 NDG 07xxx Order # 50322									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Offeror's Printed/Typed Name					Signature		Month Day Year		
Stephen Aquilino							01/08/07		
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:									
17. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name					Signature		Month Day Year		
Kenneth Somerton							01/08/07		
Transporter 2 Printed/Typed Name					Signature		Month Day Year		
18. Discrepancy									
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
Manifest Reference Number:									
18b. Alternate Facility (or Generator)					U.S. EPA ID Number				
Facility's Phone:									
18c. Signature of Alternate Facility (or Generator)					Month Day Year				
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1.		2.		3.		4.			
H141									
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name					Signature		Month Day Year		
Marc Gennaro							01/09/07		

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MP 978658888	2. Page 1 of 1	3. Emergency Response Phone 800 223-0586	4. Manifest Tracking Number 000574004 FLE		
5. Generator's Name and Mailing Address Unit 1 68 Jonapin Road Wilmington MA 01887		At: Stephen Aquilino, Property Manager		Generator's Site Address (if different than mailing address) Land parcel 60 Tufts Street Somerville MA 02143			
Generator's Phone: 978 638-8888							
6. Transporter 1 Company Name TMC Services, Inc.				U.S. EPA ID Number MAR000502138			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address General Chemical Corp 133 Leland St. Framingham Ma 01702				U.S. EPA ID Number MA0019371079			
Facility's Phone: 508 872 6000							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
			No.	Type			
	X	1. Hazardous waste, solid, n.o.s. 9, NA1077, III (TCE/PCE Soln)		DM		P	D039 U210
	X	2. Hazardous waste, liquid, n.o.s. 9, NA2082, III (TCE/PCE Groundwater) 629-629	002	DM	110	G	D039 U210
		3.					
		4.					
14. Special Handling Instructions and Additional Information TMC Job # 1007-001 NDG 07xxx							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name Stephen Aquilino				Signature <i>Stephen Aquilino</i>		Month Day Year 01 18 07	
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:				
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name Kenneth Somerton			Signature <i>Kenneth Somerton</i>		Month Day Year 01 18 07	
	Transporter 2 Printed/Typed Name			Signature		Month Day Year	
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input checked="" type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Not U210, D039 only						
	18b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number						
	Facility's Phone:						
	18c. Signature of Alternate Facility (or Generator) Month Day Year						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H141		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name Robert Harriman				Signature <i>Robert Harriman</i>		Month Day Year 01 18 07	

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MP 9 7 8 8 5 8 8 8 8	2. Page 1 of 1	3. Emergency Response Phone 800 223-8805	4. Manifest Tracking Number 000574006 FLE		
5. Generator's Name and Mailing Address Unifine 68 Jonspin Road Wilmington MA 01887				Generator's Site Address (if different than mailing address) Land parcel 60 Tufts Street Somerville MA 02143			
Generator's Phone: 9 7 8 6 5 8 - 8 8 8 8				U.S. EPA ID Number MA R 0 0 0 5 0 2 1 3 8			
6. Transporter 1 Company Name TMC Services, Inc.				U.S. EPA ID Number			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address General Chemical Corp 133 Beland St Framingham Ma 01702				U.S. EPA ID Number MA D 0 1 9 3 7 1 0 7 9			
Facility's Phone: 508 872 5000							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
			No.	Type			
	X	1. Hazardous waste, solid, n.o.s. 9. NA3077, III (TCE/PCE Soln)	1	DM	00300	P	D039 U210
	X	2. Hazardous waste, liquid, n.o.s. 9. NA182, III (TCE/PCE Groundwater)		DM		G	D039 U210
14. Special Handling Instructions and Additional Information TMC Job # 1007-001 NDG 07xxx							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name Stephen Aquino				Signature 		Month Day Year 02 15 07	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name Kenneth Sam...				Signature 		Month Day Year 02 15 07	
Transporter 2 Printed/Typed Name				Signature		Month Day Year	
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input checked="" type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Not U210 - D039 only							
18b. Alternate Facility (or Generator)				U.S. EPA ID Number			
Facility's Phone:				Month Day Year			
18c. Signature of Alternate Facility (or Generator)				Month Day Year			
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. HAZ		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name JOHN CURLEY				Signature 		Month Day Year 02 15 07	

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MP 0786588888	2. Page 1 of 1	3. Emergency Response Phone 800 223-8865	4. Manifest Tracking Number 000574005 .FLE					
5. Generator's Name and Mailing Address UniFirst 68 Jonsin Road Wilmington MA 01837		Generator's Site Address (if different than mailing address) Land parcel 60 Tufts Street Somerville MA 02143								
Generator's Phone: 978 858-8888				U.S. EPA ID Number MA R 000502138						
6. Transporter 1 Company Name TMC Services, Inc.				U.S. EPA ID Number						
7. Transporter 2 Company Name				U.S. EPA ID Number						
8. Designated Facility Name and Site Address General Chemical Corp. 133 Leland St Framingham MA 01702				U.S. EPA ID Number MA D 019371079						
Facility's Phone: 508 872 5000										
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
				No.	Type					
	X	1. Hazardous waste, solid, n.e.s. S. NA3077, III (TCE/PCE Sol)			DM		P	D039	U210	
	X	2. Hazardous waste, liquid, n.e.s. S. NA3082, III (TCE/PCE Groundwater)		1	DM	00010	G	D039	U210	
		3.								
	4.									
14. Special Handling Instructions and Additional Information TMC Job # 1007-001 NDG 07xxx										
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.										
Generator's/Offor's Printed/Typed Name Stephen Aquilino		Signature <i>Stephen Aquilino</i>		Month 08		Day 16		Year 07		
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit:		Date leaving U.S.:					
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials									
	Transporter 1 Printed/Typed Name Robert Somory		Signature <i>Robert Somory</i>		Month 02		Day 16		Year 07	
	Transporter 2 Printed/Typed Name		Signature		Month		Day		Year	
DESIGNATED FACILITY	18. Discrepancy									
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input checked="" type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Not U210 - D039 only									
	Manifest Reference Number:									
	18b. Alternate Facility (or Generator) U.S. EPA ID Number									
	Facility's Phone:									
18c. Signature of Alternate Facility (or Generator) Month Day Year										
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)										
1.		2. H/H		3.		4.				
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a										
Printed/Typed Name Res Somory		Signature <i>Res Somory</i>		Month 02		Day 16		Year 07		


UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number		
		MP9786588888	1	800 223-8886	000574007 FLE		
5. Generator's Name and Mailing Address		Generator's Site Address (if different than mailing address)					
Unit First 68 Joseph Road Wilmington MA 01887		Land parcel 60 Tufts Street Somerville MA 02143					
Generator's Phone: 978 658-2888							
6. Transporter 1 Company Name		U.S. EPA ID Number					
TMC Services, Inc.		MAR000502138					
7. Transporter 2 Company Name		U.S. EPA ID Number					
8. Designated Facility Name and Site Address		U.S. EPA ID Number					
General Chemical Corp 133 Leland St Framingham Ma 01702		MA0019371079					
Facility's Phone:							
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
		No.	Type				
X	1. Hazardous waste, solid, n.o.s. 9, NA3077, III (TCE/PCE Soln)		DM		P	D039	U210
X	2. Hazardous waste, liquid, n.o.s. 9, NA3012, III (TCE/PCE Groundwater) 1909	1	DF DM	30	G	D039	U210
	3.						
	4.						
14. Special Handling Instructions and Additional Information							
TMC Job # 1007-001 NDG 07xxx							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offoror's Printed/Typed Name		Signature		Month		Day	Year
Stephen Aquilino		[Signature]		02		20	07
16. International Shipments		<input type="checkbox"/> Import to U.S.		<input type="checkbox"/> Export from U.S.		Port of entry/exit:	
Transporter signature (for exports only):				Date leaving U.S.:			
17. Transporter Acknowledgment of Receipt of Materials		Signature		Month		Day	Year
Transporter 1 Printed/Typed Name		[Signature]		02		20	07
Transporter 2 Printed/Typed Name		Signature		Month		Day	Year
18. Discrepancy							
18a. Discrepancy Indication Space		<input type="checkbox"/> Quantity		<input checked="" type="checkbox"/> Type		<input type="checkbox"/> Residue	
				<input type="checkbox"/> Partial Rejection		<input type="checkbox"/> Full Rejection	
18b. Alternate Facility (or Generator)		Manifest Reference Number:		U.S. EPA ID Number			
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)				Month		Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H141		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name		Signature		Month		Day	Year
MARC GERMAIN		[Signature]		02		20	07

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MP 9 7 8 6 5 8 8 8 8	2. Page 1 of 1	3. Emergency Response Phone 800 223-8865	4. Manifest Tracking Number 000574088 FLE		
5. Generator's Name and Mailing Address LindFast 68 Joseph Road Wilmington MA 01897		Generator's Site Address (if different than mailing address) Land parcel 50 Tufts Street Somerville MA 02143					
Generator's Phone: 978 658-8888		U.S. EPA ID Number MAR000502138					
6. Transporter 1 Company Name TMC Services, Inc.		U.S. EPA ID Number					
7. Transporter 2 Company Name		U.S. EPA ID Number					
8. Designated Facility Name and Site Address General Chemical Corporation 133-138 Lehigh Street Framingham MA 01702		U.S. EPA ID Number MAD018371079					
Facility's Phone: 508 872-5000							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	X	1. Hazardous waste, liquid, n.o.s. 9, NA3082, III (PCE/PCE water) (RC: D039)		DM		G	D039 U210
	X	2. Hazardous waste, solid, n.o.s. 9, NA3077, III (PCE Contaminated Soil) (RC: D039)	2001 - 2002	2 DM	500	P	D039 U210
		3.					
		4.					
14. Special Handling Instructions and Additional Information TMC Job # 1007-001 NDG 070 L2 - 2X55 Order # 4150651							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offoror's Printed/Typed Name Stephen Aquilino		Signature 		Month Day Year 02 21 07			
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:				
	Transporter signature (for exports only):						
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name Kenny L. Somerville		Signature 		Month Day Year 02 21 07		
DESIGNATED FACILITY	Transporter 2 Printed/Typed Name		Signature		Month Day Year		
	18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input checked="" type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Not U210 (D039 only)		Manifest Reference Number:					
18b. Alternate Facility (or Generator)		U.S. EPA ID Number					
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)		Month Day Year					
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H141		2. 3		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name Stephen K. Korman		Signature 		Month Day Year 02 21 07			

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MP 9 7 8 6 5 8 8 8 8 8	2. Page 1 of 1	3. Emergency Response Phone 800 223-8866	4. Manifest Tracking Number 000574090 FLE		
5. Generator's Name and Mailing Address Unifind 58 Joseph Road Wilmington MA 01887		Alt: Stephen Aquilino, Property Manager		Generator's Site Address (if different than mailing address) Land parcel 50 Tuffs Street Somerville MA 02143			
Generator's Phone: 978 658-9888							
6. Transporter 1 Company Name TMC Services, Inc.				U.S. EPA ID Number MAR000502138			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address General Chemical Corporation 125-138 Lombard Street Frammingham MA 01702				U.S. EPA ID Number MAD019371079			
Facility's Phone: 508 872-5000							
9a. <input checked="" type="checkbox"/> 1. Hazardous waste, liquid, n.o.s. 9. NA3082, III (TCE / PCE water) (RQ: D039)	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X			DM			G	D039 U210
X	2. Hazardous waste, solid, n.o.s. 9. NA3077, III (PCE Contaminated Soil) (RQ: D039)		2699-2699 XX2 DM		X1600	P	D039 U210
	3.						
	4.						
14. Special Handling Instructions and Additional Information TMC Job # 1007-001 NDG 070							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name Stephen Aquilino				Signature Stephen Aquilino		Month Day Year 03/10/07	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.				Port of entry/exit: Date leaving U.S.:			
Transporter signature (for exports only):							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name Anthony Cicchetti				Signature Anthony Cicchetti		Month Day Year 03/10/07	
Transporter 2 Printed/Typed Name				Signature		Month Day Year	
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input checked="" type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Not 4210 (D039 only)							
18b. Alternate Facility (or Generator)				U.S. EPA ID Number			
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)				Month Day Year			
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1.		2.		3.		4.	
		H1111					
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name MARC CAMPAN				Signature MARC CAMPAN		Month Day Year 03/10/07	

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number					
		MP 9786588888	1	800 223-8886	000574091 FLE					
5. Generator's Name and Mailing Address		Att: Stephen Aquilino, Property Manager		Generator's Site Address (if different than mailing address)						
UniFirst 68 Joseph Road Wilmington MA 01887				Land parcel 50 Tufts Street Somerville MA 02143						
Generator's Phone:		878 658-8888		U.S. EPA ID Number						
6. Transporter 1 Company Name		TMC Services, Inc.		MAR000502138						
7. Transporter 2 Company Name				U.S. EPA ID Number						
8. Designated Facility Name and Site Address		General Chemical Corporation 133-135 Leland Street Frammingham MA 01702		U.S. EPA ID Number						
Facility's Phone:		501 872-5000		MAD018371079						
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
				No.	Type					
	X	1. Hazardous waste, liquid, n.o.s. 9, NA3082, III (TCE / PCE water) (RQ: D039)		1	DM	0030	G	D039	U210	
	X	2. Hazardous waste, solid, n.o.s. 9, NA3077, III (PCE Contaminated Soil) (RQ: D039)			DM		P	D039	U210	
		3.								
INT'L	14. Special Handling Instructions and Additional Information		TMC Job # 1007-001 NDG 070 L1-1X55							
	15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.		000574091							
TRANSPORTER	Generator's/Offor's Printed/Typed Name		Signature		Month		Day		Year	
	Stephen Aquilino		Stephen Aquilino		03		16		07	
	16. International Shipments		Port of entry/exit:							
	<input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Date leaving U.S.:							
DESIGNATED FACILITY	17. Transporter Acknowledgment of Receipt of Materials		Signature		Month		Day		Year	
	Transporter 1 Printed/Typed Name		Signature		Month		Day		Year	
	Transporter 2 Printed/Typed Name		Signature		Month		Day		Year	
	18. Discrepancy									
	18a. Discrepancy Indication Space									
	<input type="checkbox"/> Quantity <input checked="" type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
	Not U210 (D039 only)		Manifest Reference Number:							
	18b. Alternate Facility (or Generator)		U.S. EPA ID Number							
	Facility's Phone:									
	18c. Signature of Alternate Facility (or Generator)		Month Day Year							
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
	1. 1141 2. 3. 4.									
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
	Printed/Typed Name		Signature		Month		Day		Year	
Stephen Aquilino		Stephen Aquilino		03		16		07		

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number	
		MP 9 7 8 6 5 8 8 8 8	1	800 223-8835	000574089 FLE	
5. Generator's Name and Mailing Address		At: Stephen Aquilino, Property Manager		Generator's Site Address (if different than mailing address)		
Unifirst 68 Jompin Road Wilmington MA 01887				Land parcel 60 Tufts Street Somerville MA 02143		
Generator's Phone: 978 658-8888						
6. Transporter 1 Company Name				U.S. EPA ID Number		
TMC Services, Inc.				MAR 000502138		
7. Transporter 2 Company Name				U.S. EPA ID Number		
8. Designated Facility Name and Site Address				U.S. EPA ID Number		
General Chemical Corporation 133-138 Leland Street Framingham MA 01702				MAD 019371079		
Facility's Phone: 508 872-5000						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		No.	Type			
X	1. Hazardous waste, liquid, n.o.s. 9. NA3082, III (TCE / PCE water) (RQ: D039)	2991	0001 DM	9.5	G	D039 U210
X	2. Hazardous waste, solid, n.o.s. 3. NA3077, III (PCE Contaminated Soil) (RQ: D039)		DM		P	D039 U210
	3.					
	4.					
14. Special Handling Instructions and Additional Information						
TMC Job # 1007-001 NDG 070 L1 - 1X55 Order # 302410						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Offor's Printed/Typed Name		Signature		Month	Day	Year
Stephen Aquilino				3	23	07
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit:		Date leaving U.S.:		
Transporter signature (for exports only):						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name		Signature		Month	Day	Year
Kenneth Dey		Kenneth Dey		03	23	07
Transporter 2 Printed/Typed Name		Signature		Month	Day	Year
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input checked="" type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection		Manifest Reference Number:				
Not 11210 (D039 only)						
18b. Alternate Facility (or Generator)		U.S. EPA ID Number				
Facility's Phone:						
18c. Signature of Alternate Facility (or Generator)		Month Day Year				
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1.	2.	3.	4.			
H141						
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name		Signature		Month	Day	Year
Stephen Aquilino				03	23	07



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